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Syngenta Participations AG
Intellectual Property,
P.O. Box
4002 Basel
SUISSE



Formalities Officer

Name: ~~A. Brox~~ J. R. Bichler, Hermine

Tel.: 8012

Date

28-07-2006

Reference PH/5-21028/A	Application No./Patent No. 97940156.9 - 2117 / 0930823
Applicant/Proprietor Syngenta Participations AG	

DECISION TO MAINTAIN THE EUROPEAN PATENT IN AMENDED FORM (ARTICLE 102(3) EPC)

European Patent No. : 0930823
Filing date : 03.09.97
Priority claimed : 05.09.96/ CHA 220296

Designated States and
Patent proprietor(s) : CH DE FR IT LI
Syngenta Participations AG
Schwarzwaldallee 215
4058 Basel/CH

is maintained as amended.

Maintenance is based on the documents as specified and notified previously.

The announcement that the European patent is being maintained as 'amended will be published in the European Patent Bulletin 06/34 on 23.08.06.

Your attention is drawn to the communication of 18.05.06, regarding 'the requirements and time limits for submitting translations of the 'new European Patent Specification in the designated Contracting States.

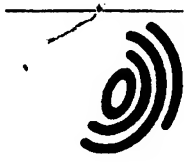
Opposition division

1st Examiner:
Fazzi R

2nd Examiner:
Fitz W

Chairman:
Steendijk M





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BASF Aktiengesellschaft
D-67056 Ludwigshafen
ALLEMAGNE

Application No. / Patent No. 97 940 156.9 - 1211 / 930823 / 01	Ref. GVX/P-C6 HEISTR	Date 26.01.2006
Proprietor Syngenta Participations AG		

Provision of a copy of the minutes in accordance with Rule 76(4) EPC

The attached copy of the minutes of the oral proceedings is sent to you in accordance with Rule 76(4) EPC.



Ambroa, J.R.
Formalities Officer
Tel. No.: +49 89 2399 - 8012

Enclosure(s): Copy of the minutes (Form 2309)

Application No.:

97 940 156.9

Patent No.:

EP-B-930823

Minutes of the oral proceedings before the OPPOSITION DIVISION

The proceedings were public.

Proceedings opened on 24.11.2005 at 09:00 hours

Present as members of the opposition division:

Chairman:	Steendijk, M
1st member:	Fazzi, R
2nd member:	Fitz, W
Minute writer:	Fitz, W

Present as or for the party or parties:

- For the Proprietor(s): Syngenta Participations AG
J. E. Swift, accompanied by Dr. K. Elliot
- For the Opponent 1: BASF Aktiengesellschaft
Dr. R. Schlund

The identity of the person/s (as well as, if applicable, that of the witness or witnesses) and, where necessary, the authorisation to represent/authority to act were checked.

Essentials of the discussion and possible relevant statements of the parties:



The proprietor confirms his request that the patent be maintained in amended form on the basis of the claims filed as the main request. He also confirms his first to third auxiliary requests. All requests have been filed with letter of 24.10.2005.

The opponent confirms his request that the patent be revoked in its entirety.

With respect to the main request, the opponent argues that the feature "wherein the composition provides an increase in the selectivity for said useful plant cultivations" that was newly introduced into claim 1 has no basis in the application as originally filed and renders the claim unclear.

The proprietor submits that the feature has a basis in paragraph 6 of the description. He admits that the feature is not intended to differentiate claimed matter from the prior art. The chairman observes in this context that claim 1 of the first auxiliary request lacks the feature and is otherwise identical to claim 1 of the main request.

After brief deliberation, the chairman announces that the opposition division considers the introduction of the feature as inappropriate for an opposition procedure and that the main request is not admissible.

The chairman indicates that in the written procedure the opponent has made observations with regard to the priority and asks the proprietor for a reaction. The proprietor admits that the opponent's observations are correct. The opponent has nothing further to add.

The chairman suggests to move on with an evaluation of the first auxiliary request with respect to novelty.

The opponent indicates that documents D1 and D2 are not novelty-destroying for the first auxiliary request.

With respect to D3 (table 8 on page 33: glyphosate/metolachlor/maize and page 11, paragraph 2: herbicide tolerant crops), the opponent maintains his novelty objection. The proprietor responds that there is no specific reference with respect to resistance to the phospho-herbicide. The chairman inquires that if the maize survives would that not indicate



that the maize is tolerant. The proprietor responds that it is not clear to which herbicide the crop is resistant to.

The opponent indicates that document D4 is not novelty-destroying.

With respect to D5, the opponent maintains his novelty objection. At the relevant dates there has been overwhelming technical knowledge that glyphosate and glufosinate would kill any not resistant plant. The proprietor responds that there is only a very general passage (page 10, paragraph 4). In table B1 only herbicidal activity is indicated. There is no reference on whether the crop actually survives.

With respect to D6, the opponent maintains his novelty objection. The main teaching of D6 is using glyphosate with broadleaf herbicides on glyphosate-resistant plants. Dicamba is specifically mentioned. The opponent argues that tolerant tobacco is shown. The proprietor should substantiate his allegation that D6 is not enabled. The proprietor maintains that D6 is not enabled, and that this is substantiated in D22-D24.

The opponent indicates that documents D7-D21 are not novelty-destroying. He also indicates that he has no further objections with regards to novelty.

The chairman invites the proprietor and the opponent for further comments, before the division deliberates. The proprietor indicates that D3 and D5 do not disclose phospho-herbicide resistant plants and that D6 is not enabled.

The division deliberates from 10:15 to 10:45.

The chairman announces that the opposition division considers D3, D5 and D6 as novelty destroying for the first auxiliary request. With respect to D3 and D5 the division is of the opinion that the skilled person would read without reasonable doubt that phospho-herbicide resistant plants are concerned. The argumentation that the teaching of D6 is not enabling is not considered convincing by the division.

With respect to the second auxiliary request, the chairman points out that claim 1 also contains the feature "wherein the composition provides an increase in the selectivity for



said useful plant cultivations" and asks the proprietor whether he wishes to make further comments, in addition to those already made with respect to the main request.

The proprietor does not wish to make further comments.

After brief deliberation, the chairman announces that the opposition division considers the introduction of the feature as inappropriate for an opposition procedure and that the second auxiliary request is not admissible.

With respect to the third auxiliary request the chairman indicates that the feature "wherein the composition provides an increase in the selectivity for said useful plant cultivations" is present in claim 16. Apart from that, mixtures concerning dicamba, S-metolachlor, and the compound specified by the formula are still present.

The proprietor does not wish to comment.

After brief deliberation, the chairman announces that the opposition division considers the third auxiliary request as not admissible.

The proprietor requests a 20 minutes break in order to consider further submissions. The proceedings are interrupted at 10:55 and resumed at 11:15.

The proprietor files a fourth auxiliary request (see attached).

The chairman suggests a break and invites the opponent to prepare himself to consider admissibility and novelty and to start on inventive step after the break.

The proceedings are interrupted at 11:20 and resumed at 11:50.

The opponent indicates that claims 14-16 are not acceptable. The combinations are so specific that e.g. claim 14 cannot be considered as supported by the originally filed application. The specific combinations cannot be considered disclosed in the original application.



The proprietor does not agree. He requests, however, that claims 14-16 are deleted. The chairman indicates that accordingly no decision will be taken on these claims.

The opponent indicates that he has no novelty objections with respect to the fourth auxiliary request, claims 1-13.

The chairman opens the discussion on inventive step with the question on whether the safening effect data provided during substantive examination could be used in order to evaluate inventive step. The proprietor indicates that he has no further data in addition to the safening effect data already on file. The opponent argues that a safening effect could not be deduced from the originally filed application and should not be taken into consideration for the evaluation of inventive step. The chairman, after deliberation, indicates that the safening effect can be used as substantiating inventive step, as long as it is credible over the whole scope.

The opponent indicates that D1 can be considered the closest prior art document. A safening effect is indicated in D1 on page 2, paragraph 2. Other phospho-herbicide, co-herbicide mixtures are disclosed in D2, D6, D8. The fourth auxiliary request lacks an inventive step in view of D1 / D2, D6, D8. Furthermore the opponent indicates that he remains with his written arguments relating to glufosinate versus glyphosate.

The proprietor responds that the skilled person would never consider using glufosinate on a glyphosate-resistant plant and vice versa. The safening effect was not foreseeable in view of the prior art.

After a break for deliberation from 12:47 - 12:52 the chairman expresses the opinion of the opposition division that a safening effect was not generally foreseeable. The use of the tested compounds may be considered inventive. For the untested compounds a safening effect is not considered credibly supported. With respect to demethenamide, in D8 a combination on a resistant plant has been tested (soya). In view of D8, methods involving the use of demethenamide as the co-herbicide on other crops are not considered inventive.

There is a break from 12:58 - 13:50.

**Bescheid/Protokoll (Anlage)**

Datum
Date 26.01.2006
Date

Communication/Minutes (Annex)

Blatt
Sheet 5
Feuille

Notification/Procès-verbal (Annexe)

Anmelde-Nr.:
Application No.: 97 940 156.9
Demande n°:

The proprietor files a fifth auxiliary request (see attached).

The opponent indicates that he has no observation regarding admissibility and no further objections with regard to novelty and inventive step.

The proprietor files amended description pages (see attached).

The chairman notes the following typographical inconsistencies: page 2, line 8: full stop instead of comma; page 3, line 35: full stop instead of comma; page 6, line 41: full stop instead of comma; page 9, line 11: delete comma. The proprietor requests correction.

The opponent has no further comments.

After brief deliberation, the chairman concludes the oral proceedings by announcing that the main request and the first to the fourth auxiliary requests are rejected. The fifth auxiliary request is considered to comply with the requirements of the EPC.

After deliberation of the opposition division,

- the chairman announced the following **decision**:

"Account being taken of the amendments made by the patent proprietor during the opposition proceedings, the patent and the invention to which it relates are found to meet the requirements of the European Patent Convention. The currently valid documents are those according to the fifth auxiliary request.

Regarding the reasons for the decision, the chairman referred to:

Article 102(3) EPC.

The chairman **closed the oral proceedings** on 24.11.2005 at 14:30 hours.



signed:

Steendijk, M

.....
Chairman

signed:

Fitz, W

.....
Minute Writer

Enclosure(s):

fourth auxiliary request, fifth auxiliary request,
amended description pages
Form 2339.4

Documents for the maintenance of the patent as amended

Description, Pages

4, 10-13	of the patent specification
2, 3, 5-9	filed during Oral proceedings on 24.11.2005

Claims, Numbers

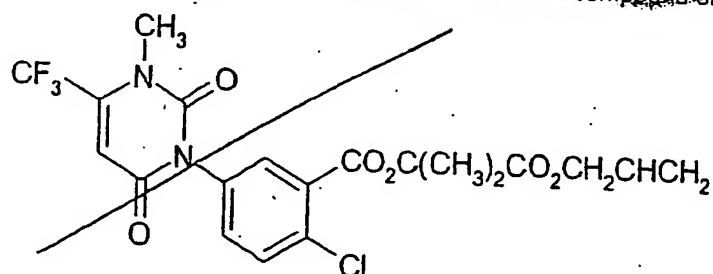
1-9	filed during Oral proceedings on 24.11.2005
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With the following amendments to the above-mentioned documents by the opposition division

Description, Pages	2,3,6,9
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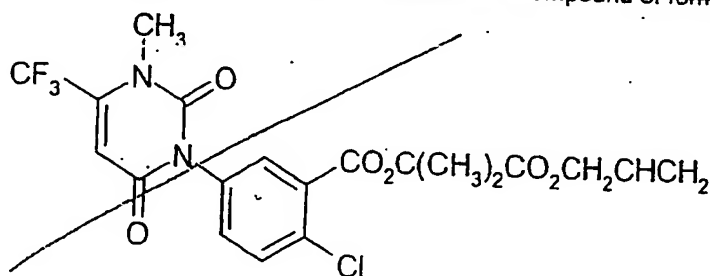
~~Fourth~~
Fifth Auxiliary Request

1. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising ~~dicamba~~, pyridate, dimethenamide and its S-enantiomer, fluometuron, propaquizafop, atrazine, clodinafop, norflurazone, ametryn, terbuthylazine, simazine, prometryn, NOA-402989, as well as the compound of formula



is allowed to take effect on the cultivated plant or its habitat, with the provision that compositions containing glufosinate and atrazine, ~~as well as glufosinate and atrazine and dicamba~~ are not used in glufosinate-resistant maize, and further that compositions containing glyphosate and atrazine are not used in glyphosate-resistant maize, and compositions containing glyphosate and dimethenamide are not used in glyphosate-resistant soya.

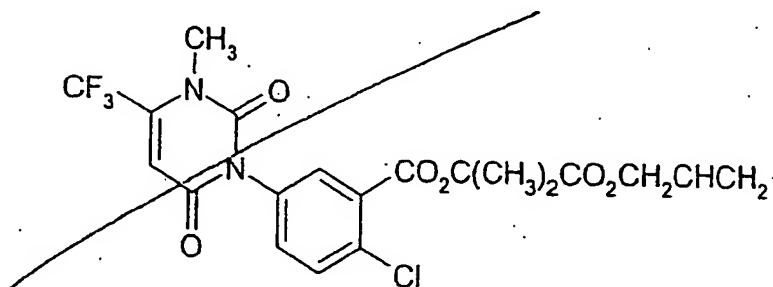
2. Process according to claim 1 for the control of weeds in cultivations of useful plants which are resistant to the herbicide glufosinate, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising ~~dicamba~~, pyridate, dimethenamide, fluometuron, propaquizafop, atrazine, ametryn, terbuthylazine, simazine, prometryn, ~~as well as the compound of formula~~



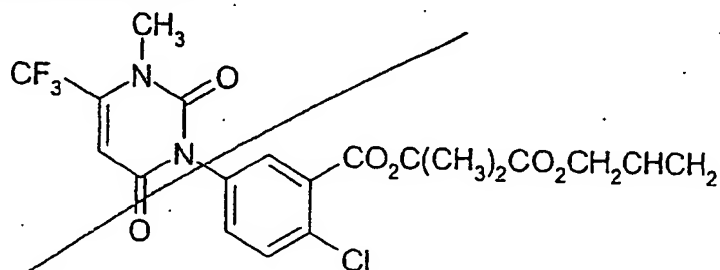
is allowed to take effect on the cultivated plant or its habitat.

3. Process according to claim 1, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising ~~dicamba~~, pyridate, dimethenamide and its S-enantiomer, atrazine,

NOA-402989, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula



4. Process according to claim 3, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, atrazine, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula



5. Process according to claim 1, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of fluometuron.

6. Process according to claim 5, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of fluometuron.

7. Process according to claim 1, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of propaquizafop.

8. Process according to claim 7, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of propaquizafop.


9. Process according to claim 1, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of ametryn.

10. Process according to claim 9, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of ametryn.

11. Process according to claim 1, characterised in that the useful plant cultivations are treated with the said composition at application rates corresponding to 0.3 to 4/0 kg total active ingredient per hectare.

12. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, norflurazone and NOA-402989.

13. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, and NOA-402989.

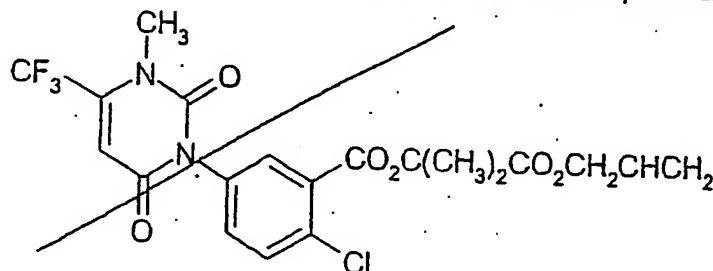
14. ~~Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate, and a synergistic amount of ^{dicamba} at least one further herbicide selected from the group comprising metolachlor and its enantiomer is allowed to take effect on the cultivated plant or its habitat, and wherein the composition provides an increase in the selectivity for said useful plant cultivations.~~

15. Process according to claim 14, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate.

16. ~~Process according to claim 14, characterised in that the useful plant being cultivated is soy which is resistant to glufosinate.~~

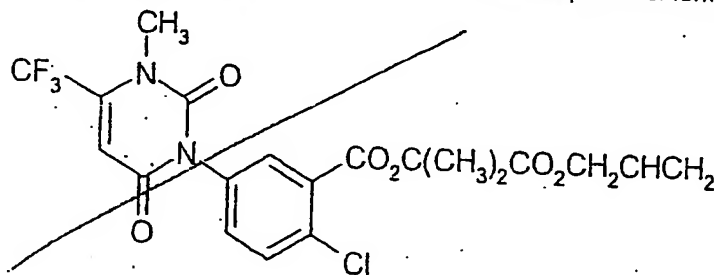
J. E. M. J. J.

1. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, fluometuron, propaquizafop, atrazine, clodinafop, acifluorfen, ametryn, terbutylazine, simazine, prometryn, NOA 402089, as well as the compound of formula



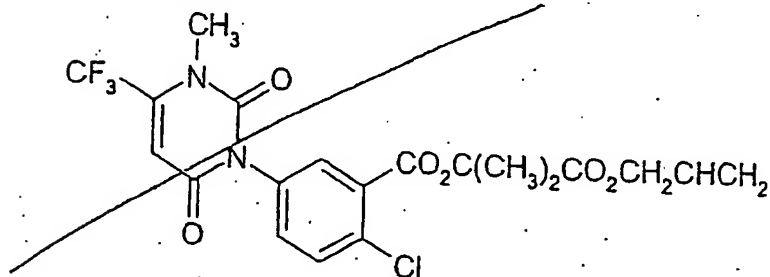
is allowed to take effect on the cultivated plant or its habitat, with the provision that compositions containing glufosinate and atrazine, as well as glufosinate and atrazine and dicamba are not used in glufosinate-resistant maize, and further that compositions containing glyphosate and atrazine are not used in glyphosate-resistant maize, and compositions containing glyphosate and dimethenamide are not used in glyphosate-resistant soya.

2. Process according to claim 1 for the control of weeds in cultivations of useful plants which are resistant to the herbicide glufosinate, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, fluometuron, propaquizafop, atrazine, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula

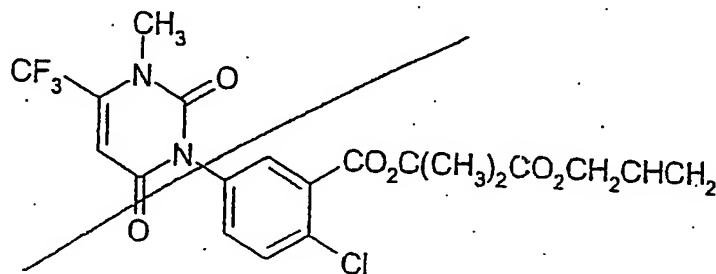


is allowed to take effect on the cultivated plant or its habitat.

3. Process according to claim 1, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, atrazine,



4. Process according to claim 3, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, atrazine, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula



- ~~5. Process according to claim 1, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of fluometuron.~~

- ~~6. Process according to claim 5, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of fluometuron.~~

- 5.7. Process according to claim 1, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of propaquizafop.

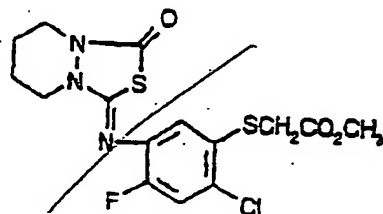
- 5.8. Process according to claim 5, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of propaquizafop.

9. ~~Process according to claim 1, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of ametryn.~~
10. ~~Process according to claim 9, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of ametryn.~~
- 7.11. Process according to claim 1, characterised in that the useful plant cultivations are treated with the said composition at application rates corresponding to 0.3 to 4/0 kg total active ingredient per hectare.
- 8 12. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, norflurazon and ~~NOA-402989~~.
- 9 13. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, and ~~NOA-402989~~.
14. ~~Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate, and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor and its enantiomer is allowed to take effect on the cultivated plant or its habitat, and wherein the composition provides an increase in the selectivity for said useful plant cultivations.~~
15. Process according to claim 14, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate.
16. Process according to claim 14, characterised in that the useful plant being cultivated is soy which is resistant to glufosinate.

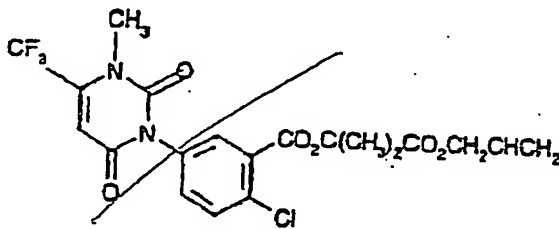
Description

[0001] The present invention relates to a new process for the control of weeds in useful plant cultivations, for example in the cultivation of maize, soya, cotton, rape, beet and sugar cane, which are resistant to phospho-herbicides.

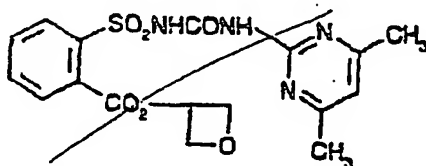
[0002] The phospho-herbicides glufosinate and glyphosate are described for example in The Pesticide Manual, Tenth Edition, 1994, Crop Protection Publications, BCPC. In addition, the following herbicides are similarly known: prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide, metolachlor, fluometuron, propaquizafop, atrazine, ametryn, terbutylazine, simazine, clodinafop, norflurazone, as well as prometryn. The S-enantiomer of metolachlor is known from US 5,002,606, the S-enantiomer of dimethenamide from US 5,457,985. The metabolite NOA-402989 is known from the Zeitschrift für Pflanzenkrankheiten und Pflanzenschutz, Sonderheft X, 355-360 (1984) as 3-phenyl-4-hydroxy-6-chloropyridazine. The compound of formula



is described for example in US 4,674,819, US 5,183,492 discloses the compound of formula



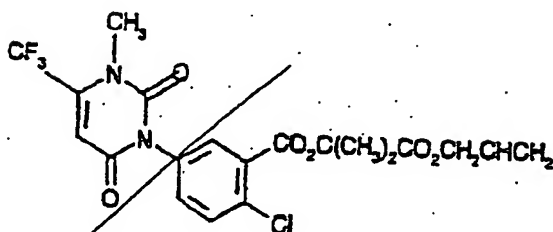
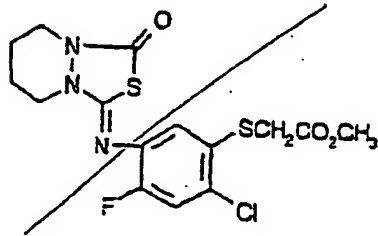
and the compound of formula



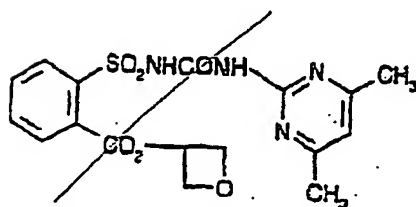
is known from EP-A-490,701.

[0003] It has now surprisingly been found that a quantitatively variable combination of phospho-herbicides selected from the group comprising glufosinate and glyphosate with at least one of the above-listed other herbicides exhibits a synergistic effect which is capable of controlling the majority of weeds occurring preferably in useful plant cultivations that are resistant to glufosinate or glyphosate, both in pre-emergence and in post-emergence, without significantly damaging the useful plants.

[0004] Therefore, according to the present invention, a new process is proposed for the control of weeds in the cultivation of useful plants that are resistant to phospho-herbicides, the process being characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide and its S-enantiomer, metolachlor and its S-enantiomer, fluometuron, propaquizafop, atrazine, clodinafop, norflurazone, ametryn, terbutylazine, simazine, prometryn, NOA-402989, as well as the compounds of formulae



and



is allowed to take effect on the cultivated plant or its habitat, with the provision that compositions containing glufosinate and metolachlor, glufosinate and atrazine, glufosinate and metolachlor and atrazine, as well as glufosinate and atrazine and dicamba are not used in glufosinate-resistant maize, and further that compositions containing glyphosate and atrazine are not used in glyphosate-resistant maize, and compositions containing glyphosate and metolachlor or glyphosate and dimethenamide are not used in glyphosate-resistant soya.

[0005] It is highly surprising that the combination of a phospho-herbicide such as glufosinate or glyphosate with at least one of the above-mentioned further herbicides surpasses the additional effect to be expected in principle on the weeds to be controlled, and thus extends the limits of activity of both active ingredients in particular in two different respects.

[0006] On the one hand, the application amounts of the individual compounds applied are reduced, whilst maintaining a good level of activity. On the other hand, the composition used according to the invention still achieves a high rate of weed control where the individual substances have become no longer agronomically useful in small application amounts. The consequence of this is a considerable widening of the weed spectrum and an additional increase in selectivity for useful plant cultivations, which is necessary and desired in the case of an unintentional overdose of active ingredient. In addition, the composition according to the invention allows greater flexibility of subsequent cultivations whilst maintaining the outstanding control of weeds in useful plants.

[0007] The herbicide mixture used according to the invention may be used on glufosinate- or glyphosate-resistant useful plants, especially maize, cotton, rape, sugar beet, sugar cane and soya, against a large number of agronomically important weeds, such as *Stellaria*, *Nasturtium*, *Agrostis*, *Digitaria*, *Avena*, *Setaria*, *Sinapis*, *Lolium*, *Solanum*, *Phaseolus*, *Echinochloa*, *Scirpus*, *Monochoria*, *Sagittaria*, *Bromus*, *Alopecurus*, *Sorghum halepense*, *Rottboellia*, *Cyperus*, *Abutilon*, *Sida*, *Xanthium*, *Amaranthus*, *Chenopodium*, *Ipomoea*, *Chrysanthemum*, *Galium*, *Viola* and *Veronica*. It may also be used for non-selective weed control and for all application methods that are usual in agriculture, e.g. pre-emergent application, post-emergent application and seed disinfecting.

[0008] Useful plant cultivations which are tolerant towards the herbicide glufosinate or glyphosate are preferably

[0019] The efficiency of expression may normally be further increased by optimising the codon usage in such a way that only those codons that are most preferred in the respective target plant, for example maize, are used for gene resynthesis. Further details relating to the construction of synthetic genes which have been optimised for expression in maize may be found e.g. in the international application having publication no. WO 93/07278.

The glufosinate-tolerant plants obtainable in this way may then be propagated, i.e. produced, by means of conventional cultivation methods, whereby the glufosinate tolerance is passed on to subsequent generations by transmission.

The processes for the production of such glufosinate-tolerant plants are described in detail in the European applications having the publication nos. EP-A 242 236, EP-A 242 246,

EP-A 257 542 and EP-A 275 957 and reference thereto is incorporated in the present application.

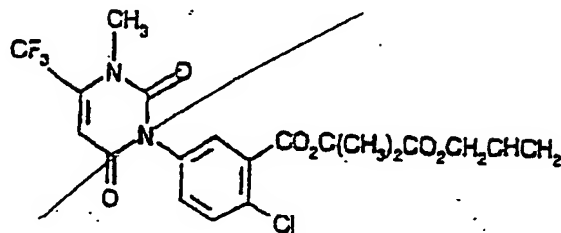
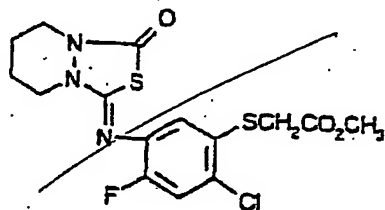
[0020] Glyphosate-resistant plants may be produced in a similar manner, whereby a gene is used which codes for a glyphosate-tolerant EPSP synthase, as is described in EP-A-115673 and EP-A-409815.

[0021] By the expression plants or useful plant cultivations that are resistant to the herbicide glufosinate or glyphosate, as is employed in the present application, are understood also plants or useful plant cultivations which are resistant to those herbicides that are metabolised in the plant or in the useful plant cultivations to glufosinate, as is the case for example when using bilanafos, or to glyphosate.

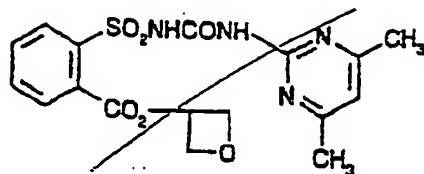
[0022] Maize which is resistant to glufosinate was treated with a tank mixture containing glufosinate and atrazine according to Res. Rep. North Cent. Weed Sci. Soc., 51, 169-170, 1994. Further tank mixtures for use in glufosinate-resistant maize are described in Res. Rep. Expert Comm. Weeds East Can., 1, 242-243, 1995 and Res. Rep. Expert Comm. Weeds East Can., 1, 205-206, 1995. The treatment of glyphosate-resistant maize or glyphosate-resistant soya with mixtures of glyphosate and atrazine, metolachlor or dimethenamide is described in Abstr. Meet. Weed Sci. Soc. Am. 37, 87, 1997, Res. Rep. North Cent. Weed Sci. Soc., 52, 426-427, 1995 and Res. Rep. North Cent. Weed Sci. Soc., 52, 266-267, 1995.

[0023] The active ingredient combination used according to the invention contains glufosinate or glyphosate and at least one of the other herbicides in any ratio of the mixture, normally with an excess of one component over the other. Preferred ratios between glufosinate or glyphosate and the components in the mixture lies between 1 : 100 and 1 : 0.001.

[0024] A preferred process according to the present invention is characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, rimsulfuron, dicamba, pyridate, dimethenamide, metolachlor and its S-enantiomer, fluometuron, propanil, alachlor, ametryn, terbutylazine, simazine, prometryn, as well as the compounds of formulae

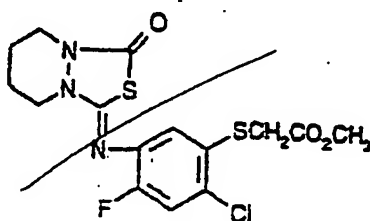


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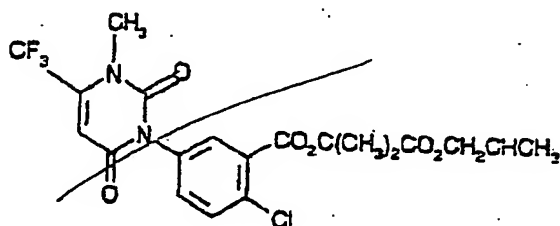


10 is allowed to take effect on the cultivated plant or its habitat.

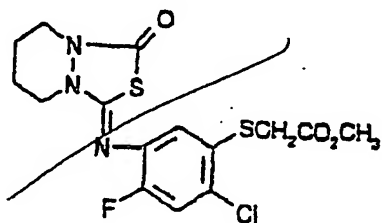
[0025] Mixtures that have proved to be especially effective when the useful plant cultivation relates to maize, which is resistant to glufosinate and/or glyphosate, are combinations of glufosinate or glyphosate with a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, pdmsulfuron, dicamba, pyridate, dimethenamide as well as its S-enantiomer, metolachlor as well as its S-enantiomer, atrazine, NOA 402989, ametryn, terbutylazine, simazine, prometryn, as well as the compounds of formulae



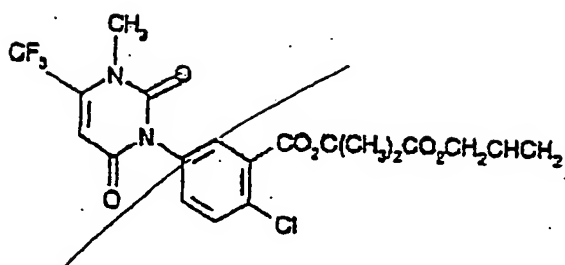
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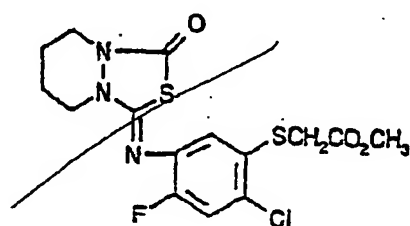
40 or combinations of glufosinate with a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, pdmsulfuron, dicamba, pyridate, dimethenamide, metolachlor as well as its S-enantiomer, atrazine, ametryn, terbutylazine, simazine, prometryn, as well as the compounds of formulae



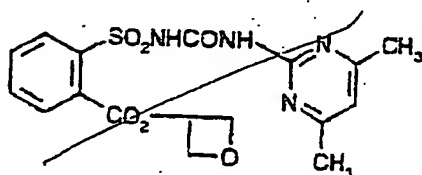
55 and



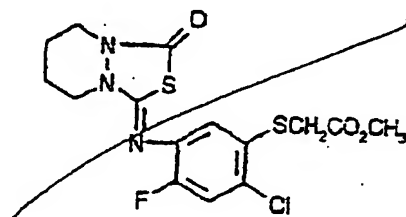
[0026] ~~When the useful plant cultivation relates to soya, which is resistant to glufosinate and/or glyphosate, it is preferable to use a composition which contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor as well as its S-enantiomer and the compounds of formula~~



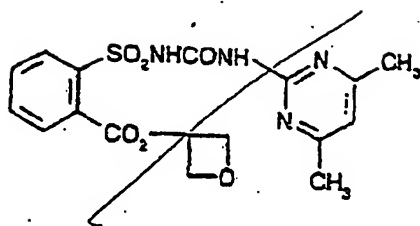
and in particular



~~or a composition which contains glufosinate and at least one further herbicide selected from the group comprising metolachlor as well as its S enantiomer and the compounds of formulae~~



and



[0027] In cotton cultivation, which are resistant to glufosinate and/or glyphosate, a composition is preferably employed which contains glufosinate or glyphosate and a synergistic amount of fluometuron, or which contains glufosinate and a synergistic amount of fluometuron.

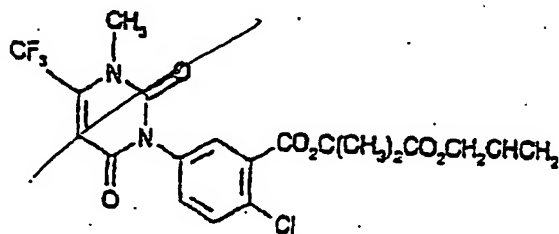
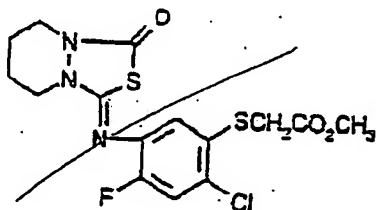
[0028] In rape or beet cultivations, which are resistant to glufosinate and/or glyphosate, a composition is preferably selected which contains glufosinate or glyphosate and a synergistic amount of propaquizafop, or which contains glufosinate and a synergistic amount of propaquizafop.

[0029] When the useful plant cultivation concerned is sugar cane, which is resistant to glufosinate and/or glyphosate, it is preferable to use a composition which contains glufosinate or glyphosate and a synergistic amount of ametryn, or a composition containing glufosinate and a synergistic amount of ametryn.

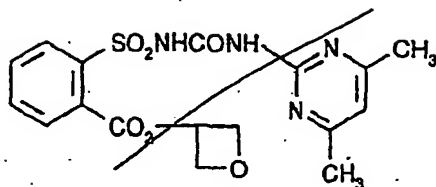
[0030] The amount applied may vary within a wide range, and depends on the nature of the soil, the type of application (pre- or post-emergent; seed disinfecting; usage in the seed drill; no tillage application etc.), the plant cultivated, the weed to be controlled, the prevalent climatic conditions and other factors determined by the type of application, time of application and target cultivation. In general, the active ingredient mixture used according to the invention may be used at an application rate of 0.3 to 4.0 kg active ingredient mixture per hectare.

[0031] In the composition used according to the invention, glufosinate or glyphosate is preferably present in a weight ratio of 1 : 10 to 1000 : 1 in relation to the other herbicide(s).

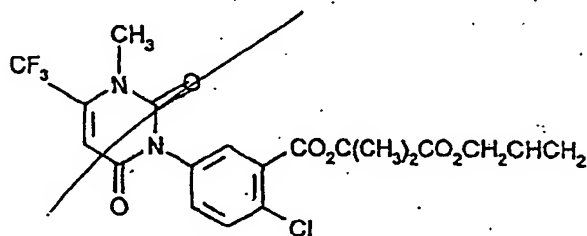
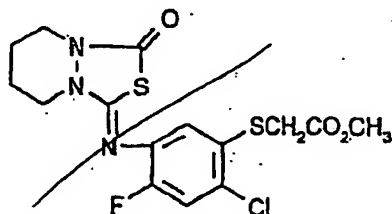
[0032] The herbicidal compositions which contain, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, pyridate, dimethenamide and its S-enantiomer, the S-enantiomer of metolachlor, fluometuron, propaquizafop, clodinafop, pendimethalin, ametryn, terbutylazine, simazine, prometryn, NOA-402988, as well as the compounds of formulae



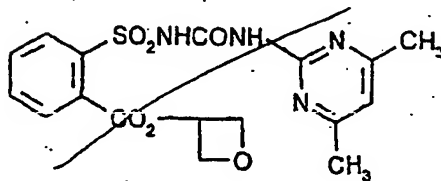
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10 as well as the herbicidal compositions which contain, in addition to the usual inert formulation assistants, glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, dicamba, pyridate, the S-enantiomer of dimethenamide, the S-enantiomer of metolachlor, flometuren, propaquizafop, and clodinafop, norflurazon, ametryn, prometryn, NOA 402989, as well as the compounds of formulae



35 and



are new and form a further object of the present invention.

[0033] Both glufosinate and/or glyphosate and the other herbicides may be used in unchanged form, i.e. as they occur during synthesis, but they are preferably processed in conventional manner with the assistants which are customary in formulation technology, such as solvents, solid carriers or surfactants, e.g. into emulsifiable concentrates, directly sprayable or diluable solutions, spray powders, soluble powders, dusting compositions, granulates or microcapsules. The application processes such as spraying, atomizing, dusting, sprinkling, dispersing or pouring are selected according to the aims strived for and the given conditions, in the same way as for the type of composition.

[0034] The formulations, i.e. the compositions, preparations or compositions containing the active ingredient glufosinate or glyphosate and the other herbicides as well as optionally one or several solid or liquid formulating assistants, are produced in a manner known *per se*, e.g. by intimately mixing and/or grinding the active ingredients with the formulating assistants such as solvents or solid carriers. In addition, surface-active compounds (surfactants) may be used when producing the formulations.

[0035] The solvents in question may be: aromatic hydrocarbons, preferably fractions C₈ to C₁₂, such as xylene mix-



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Application No. / Patent No. 97 940 156.9 - 2117 / 930823 / 01	Ref. GVXP-C6 HEISTR	Date 26.01.2006
Proprietor Syngenta Participations AG		

Interlocutory decision in Opposition proceedings (Articles 102(3) and 106(3) EPC)

The Opposition Division - at the oral proceedings dated 24.11.2005 - has decided:

Account being taken of the amendments made by the patent proprietor during the opposition proceedings, the patent and the invention to which it relates are found to meet the requirements of the Convention.

The reasons for the decision are enclosed.

Documents for the maintenance of the patent as amended:

Description, Pages

4, 10-13 of the patent specification
2, 3, 5-9 filed during Oral proceedings on 24.11.2005

Claims, Numbers

1-9 filed during Oral proceedings on 24.11.2005

With the following amendments to the above-mentioned documents by the opposition division

Description, Pages 2,3,6,9*

Comments

* Typographical errors (cf. minutes of the Oral proceedings)

Possibility of appeal

This decision is open to separate appeal according to Article 106(3) EPC. Attention is drawn to the attached text of Articles 106 to 108 EPC.



I. Facts and Submissions

- I.1. The present disputed patent n° EP 0 930 823 has been granted on EP 97940156.9, which derives from PCT/EP97/04795 filed on 3 September 1997, and claims the priority date of 5 September 1996 (cf. CH 220296).

The proprietor is Syngenta Participations AG.

The grant of the patent has been mentioned on 18 December 2002.

The title of the patent is "Process for the control of weeds".

- I.2. An opposition has been filed on 18 September 2003 by BASF AG, which is based on Article 100(a) EPC; the opponent requested the total revocation of the patent as the subject-matter therein disclosed would not be patentable within the terms of Article 52 EPC and would in particular not meet the requirements of novelty and inventive step. In case the opposition division were of the opinion that said request could not be accepted, the opponent requested Oral Proceedings.

- I.3. In his letter of 18 September 2003 the opponent cited the following documents:

D1: WO 96/25034

D2: Research Disclosure, April 1995, 271, 37242

D3: EP 820 227 (= WO 96/32013)

D4: EP 876 100 (= WO 97/24930)

D5: EP 888 055 (= WO 97/34484)

D6: US 5,094,945

D7: J. M. Lich et al., Weed Science 45(1), 12-21 (1997)

D8: L. Gonzini et al., Res. Rep. North Cent. Weed Sci. Soc. 52, 266-267 (1995)

D9: WO 92/08353

D10: EP 614 606

D11: Research Disclosure, March 1987, 275, 27546

D12: P. Homus, Oleagineux 45(2), 57-68 (1990)

D13: DE 28 39 087

D14: EP 499 798

D15: P. Langelüddeke et al., British Crop Prot. Conf. Weeds, 1985, Vol. 3, S. 1047-1052



D16: P. Westra et al., Weed Technology 6(4), 949-955 (1992)

D17: EP 378 985

D18: S. M. Brown et al., Weed Science 33(6), 843-847 (1985)

D19: EP 441 764

D20: S. Tan et al. J. Environ. Qual. 24, 970-972 (1995)

D21: EP 357 553

The opponent argued that the priority of 5 September 1996 would only be partially valid, namely for claims 2, 4, 6, 8, 10 and 12.

As regards novelty, the opponent held that claims 1-6 and 13-15 of the present disputed patent would not be new in the sense of Article 54(2) and (3) EPC and, for claim 1 in particular, the following passages of the prior art documents were cited:

D1 pages 3-5; D2 2nd line of the 3rd paragraph, and paragraph 17; D on pages 1-2 and 11; D pages 3-4; D pages 10 and 16-17; D6 column 7, lines 17-32; D7 on page 14, 2nd paragraph; D8 on page 267.

Furthermore, the subject-matter of dependent claims 2-6 was objected to in view of the teaching of documents D1 to D8.

Claims 14-15, disclosing herbicidal compositions, were deemed not to meet the requirements of Article 54 EPC in view of the following passages:

D1 page 5, 1st paragraph; D3 page 11, fifth paragraph, line 2; D4 page 4, fourth paragraph; D5 on pages 16-17, last paragraph; D9 page 5, 2nd paragraph; D10 pages 2 and 7; D11 4th paragraph; D12 page 12, table 2; D13 pages 7-8, DII-DV; D14 page 3, line 20 and tables 1-3; D15 page 1050, 3rd paragraph.

For claim 15, documents D6-D8 and D16-D21 were also cited.

The opponent further argued that the subject-matter of the present patent is not inventive in the sense of Article 56 EPC.

On page 3, paragraph 5 of the patent specification it is stated that the combination of a phospho-herbicide such as glufosinate or glyphosate with another herbicide (cf. list of claim 1) would lead to a synergistic effect in the control of weeds in useful plant cultivations. However, the data sent with letter of 8 June 2001 during the examination procedure would not show any synergistic effects in the opponent's view.

Moreover, the opponent pointed at the documents cited in the patent specification on



page 5, paragraph 22, which would also lead to the subject-matter of present claims. As regards inventive step, the opponent further cited the teaching of D1-D8 and contested the inventiveness of dependent claims 2-5 and 7-15.

- I.4 The patent proprietor replied with letter dated 28 April 2004 and requested that the patent be maintained in an amended form, namely on newly filed claims 1-15. In case the opposition division were not willing to accept the above-mentioned request, the proprietor requested Oral Proceedings under Article 116 EPC.

In said new claims, the proprietor deleted any references to formula I in claims 1-6 and to formula III in claims 1, 2, 5 and 6; references to further substances have been deleted from claims 14 and 15.

In addition, the phrase "and wherein the composition provides an increase in the selectivity for said useful plant cultivations" has been inserted in new claim 1.

The proprietor argued that present claims on file are new over the prior art due to the restricting amendments and in view of the feature "and wherein the composition provides an increase in the selectivity for said useful plant cultivations", which has been inserted in new claim 1.

As regards the herbicidal compositions of claims 14 and 15, they have been amended in order to exclude those compositions already disclosed in the prior art.

The proprietor further stated that the problem to be solved by the present application may be seen in the provision of a process with a high level of weed control with an increase in selectivity for useful plant cultivations.

The solution to this problem, namely the various combinations of glyphosate or glufosinate with a co-herbicide, would be inventive in view of the data submitted during the examination phase with letter of 8 June 2001, in which the weed control of the compositions used in the patent is comparable with or better than the control of the two components when used separately.

Said data would also show that the damage suffered by the useful crops is reduced when the compositions of the patent are used, in comparison with the damage caused when the glyphosate/glufosinate is used alone.



- I.5 In view of the opponent's and the proprietor's requests, an invitation to attend Oral Proceedings on 24 November 2005 was sent.
- I.6 On 24 October 2005 the proprietor sent a new set of requests (namely a main request and three auxiliary requests) and requested that the patent be maintained in an amended form on the basis of the claims attached to said letter.

In the main request, reference to prosulfuron and primisulfuron has been deleted from claims 1-4 as well as reference to fluometuron from claims 14-15 and reference to fluthiacet-methyl from claim 15.

The proprietor also observed that the disclosure of D8 is outside the scope of claim 1 because of the proviso at the end of said claim.

As regards D6, the proprietor submitted that this document does not constitute an enabling disclosure for the transformation and regeneration of corn *per se* and also for the production of *any* glyphosate resistant plants.

In this respect, the following documents were cited:

D22: In Re Goodman, US Case from the Court of Appeal of the Federal Circuit;

D23: the US Court in PGS v DeKalb Genetics Corp.;

D24: US 4,940,835

In the first auxiliary request, the sentence "and wherein the composition provides an increase in the selectivity for said useful plant cultivations" was deleted.

The second auxiliary request was identical to the main request, with the exception that reference to metolachlor was deleted from claims 1-6 (in view of the disclosure of D6) and separate claims 16-17 were drafted with respect to this compound.

The claims of the third auxiliary request were identical to those of the second auxiliary request with the exception that the sentence "and wherein the composition provides an increase in the selectivity for said useful plant cultivations" was deleted.

- I.7 Oral Proceedings took place on 24 November 2005.
- During the Oral Proceedings a fourth and a fifth auxiliary requests were filed (cf. annex).
- The following was decided:
- the main request was rejected as not admissible;



- the claimed subject-matter of the first auxiliary request was considered not to be new in the sense of Article 54 EPC because of the disclosure of D3, D5 and D6;
- the second auxiliary request was rejected as not admissible;
- the third auxiliary request was rejected as not admissible;
- the claimed subject-matter of the fourth auxiliary request was considered not to be inventive in the sense of Article 56 EPC;
- the fifth auxiliary request was considered to overcome the grounds of opposition.

II. Grounds for the decision

II.1 The opposition is considered to meet the requirements for admissibility.

Main request

II.2 Admissibility

Claim 1 of the main request includes the sentence "and wherein the composition provides an increase in the selectivity for said useful plant cultivations", which was also present in the main request sent with letter of 28 April 2004 and for which an objection was raised in item II.3 of the invitation to Oral Proceedings (namely that claim 1 attempts to define the subject-matter in terms of a result to be achieved, which is not in line with Guidelines C-III, 4.7).

In this respect, the requirements of Rule 57(a) EPC are not met, as the introduction of said sentence is not occasioned by the grounds for opposition specified by Article 100 EPC. The fact that said feature is not necessary for the definition of the invention can also be deduced by the formulation of the first and third auxiliary requests, where said sentence has been omitted.

Moreover, the proprietor's representative stated during Oral Proceedings that this feature does not contribute to restore novelty or inventive step over the prior art.

First auxiliary request

II.3 Amendments



In claims 1-4 sent with letter of 24 October 2005, reference to prosulfuron and primisulfuron has been deleted as well as reference to fluometuron from claims 14-15 and reference to fluthiacet-methyl from claim 15.

The amendments are considered to be in line with the requirements of Article 123(2) and (3) EPC.

The request is also considered admissible in the sense of Rule 57(a) EPC as it was conceived to delimit the claimed subject-matter from the prior art.

II.4 Novelty

During Oral Proceedings the opponent did not raise any novelty objections for the first auxiliary request in respect of documents D1, D2, D4, D7, D8 and D9-D21.

The opposition division is also of the opinion that, in view of the amendments made, the teaching of said documents does not fall within the subject-matter of claims 1-15 of said request.

Document D3, however (which is state of the art according to Article 54(3) EPC for those parts of the patent which enjoy the present priority and state of the art according to Article 54(2) EPC for those parts of the patent for which the present priority is not valid), discloses on page 33, table 8, that a compound of formula A (namely the (S)-enantiomer of metolachlor, cf, page 1) can be used with glyphosate on maize.

The use of glyphosate with the compound of formula A is also mentioned on page 11 of D3 and the use of glufosinate with the compound of formula A is mentioned on page 14. The 2nd paragraph on page 11 of D3 precises which kind of crops said document refers to, namely also those "which have been made tolerant to herbicides or classes of herbicides".

The opposition division is of the opinion that the maize used in the examples of the cited table 8 must have been resistant to phospho-herbicides, as the skilled person would not consider applying such a class of non-selective herbicides to a crop not resistant to them, which would otherwise cause the death of the crop (the results of said table indicate i. a. that the maize has not suffered any significant damage).

Thus, the teaching of D3 is considered to anticipate the subject-matter of claim 1 of the first auxiliary request.



D5 (which is state of the art according to Article 54(3) EPC) describes on page 17 (cf. end of the first paragraph) that a compound of formula A (namely butafenacil, cf. page 1) can be used together with glyphosate or glufosinate on crops.

Following the indications on page 10, 4th paragraph, crops are also those "which have been made tolerant to herbicides or classes of herbicides".

For similar reasons as mentioned in the context with document D3 the person skilled in the art would not consider applying phospho-herbicides on crops not resistant to them. Thus, the teaching of D5 is considered to anticipate the subject-matter of claim 1 of the first auxiliary request.

As regards D6, this document discloses on column 7, lines 17-32 and 35-39 that formulations to be used in glyphosate-resistant plants for protecting crops (for instance corn, soybean, tobacco, cotton) from weeds may include glyphosate in combination with atrazine or metolachlor. The use of dicamba is further mentioned as preferable.

The proprietor argued that this document does not constitute an enabling disclosure for the transformation and regeneration of corn nor for the production of *any* glyphosate resistant plants, because at the time at which D6 was filed it would not be possible to produce a transgenic resistant plant in the described manner (cf. reference to D22-D24 in the letter dated 24 October 2005).

The opposition division is however of the opinion that the teaching of D6 constitutes an enabling disclosure and thus falls within the subject-matter of claim 1 of the first auxiliary request.

According to Guidelines C-IV, 5.2 *a document is made available to the public and is thus state of the art pursuant to Article 54(1) EPC, if the information given to the skilled person is sufficient to enable him, at the relevant date, to practise the relevant teaching at that time in the field to be expected of him.* Under *relevant date* it is to be understood the publication date in the case of a document being state of the art under Article 54(2) EPC (cf. Guidelines C-IV, 7.3), which in the case of D6 is 1992.

In this respect, it is to be noticed that D22-D24 refer to documents published before 1992.

The teaching that the skilled person would take from D6 is clearly that, in case of glyphosate-resistant plants, particular combinations may be used for protecting crops from weeds, namely those already mentioned on column 7, lines 17-32 and 35-39.



Second auxiliary request

- II.5 The second auxiliary request is not admissible under Rule 57(a) EPC for the same reasons already explained for the main request (cf. the sentence "and wherein the composition provides an increase in the selectivity for said useful plant cultivations" in claim 1).

Third auxiliary request

- II.6 In this request the proprietor introduced a new independent claim 16 and a dependent claim 17 directed to the same process of claim 1 of the main request, wherein the crop is soya and the composition used contains glufosinate and/or glyphosate and metolachlor.

This request is not admissible under Rule 57(a) EPC for the same reasons explained for the main request, as independent claim 16 contains the sentence "and wherein the composition provides an increase in the selectivity for said useful plant cultivations".

- II.7 Moreover, claim 1 of the third auxiliary request would not overcome the lack of novelty over the disclosure of D3, D5 and D6 for the same reasons given for the first auxiliary request (in fact claim 1 still makes references to dicamba, (S)-metolachlor and butafenacil).

Fourth auxiliary request

II.8 Amendments

The subject-matter of claims 1-13 does not contravene the requirements of Article 123(2) and (3) EPC; the proprietor deleted any references to dicamba, butafenacil and (S)-metolachlor.

The request is also considered admissible in the sense of Rule 57(a) EPC as it was conceived to overcome novelty objections.



II.9 Novelty

In view of the restricting amendments the subject-matter of claims 1-13 can be considered new in the sense of Article 54 EPC.

In this respect, the opponent did not raise any objections.

II.10 Inventive step

Claim 1 of the fourth auxiliary request discloses a process for the control of weeds in cultivation of plants which are resistant to phospho-herbicides, characterized in that a composition comprising a specific combination of known herbicides is used on said plants.

Merely as solution to the problem of providing alternative methods for the control of weeds, the claimed subject-matter would be obvious to the person skilled in the art, who can only expect that a combination of *per se* known herbicides will retain herbicidal activity.

Decisive for the assessment of the requirement of inventive step is therefore whether any relevant surprising advantage results from the defined combinations.

The only data provided in this context are those sent with letter of 8 June 2001 during examination phase.

The opponent has argued that these data would not show any synergistic effect as referred to in the description of the patent but rather some safening effect.

Such safening effect would not have been indicated in the application as filed and should therefore not be taken into account in the assessment of inventive step.

The opposition division observes, however, that the tests from which the safening effect had become evident correspond with the tests described in the application as filed, according to which both crop tolerance and herbicide activity are to be assessed.

Even though a safening effect may not have been specifically mentioned in the application as filed, the opposition division is of the opinion that such effect would be observed when carrying out the invention as described and may therefore be taken into account in the assessment of inventive step.

D1, which is considered to represent the closest state of the art, describes that a combination of a herbicide of formula I together with glufosinate or glyphosate produces



a herbicidal action that is capable of controlling the majority of the weeds that occur, especially in crops of useful plants made tolerant to glufosinate or glyphosate, pre-emergence and post-emergence, without any significant damage being done to the useful plant (cf. pages 1-4 of D1).

The problem to be solved by the present patent may thus be seen in the provision of a further process of weed control in crops of phospho-herbicide resistant useful plants, which minimises the damage caused to the useful crop (i.e. improvement of the selectivity of the herbicide).

From D7 (prior art in as far as the present priority is not valid) it is known that a formulation of two herbicides normally leads to one of the following three effects, namely an additive, an antagonistic or a synergistic effect (cf. D7 on page 12, right-hand column), but the safening effect described above is not something that can be predicted. In view of this unpredictability of the safening effect, the data sent on 8 June 2001 would substantiate an inventive step for those methods of present claim 1 involving formulations for which a safening effect has actually been demonstrated and which had not been described for use on resistant crops before.

It is however observed that the claims comprise a variety of combinations of herbicides for which no specific data on any safening effect has been provided. These combinations have no more in common with the tested combinations than what they have in common with, for instance, the combination described in D1.

In view of the unpredictability of the safening effect, any safening effect of those non-tested combinations can therefore not be considered as substantiated and thus not be taken into consideration for the assessment of inventive step of such combinations.

Consequently, the subject-matter relating to the non-tested compositions is considered obvious as solution to the problem of providing mere further herbicide combinations.

It is further observed that claim 1 comprises a process involving the use of dimethenamide together with glufosinate or glyphosate, whereby the use of glyphosate and dimethenamide on glyphosate-resistant soya is excluded.

Such excluded use of dimethenamide had been described in document D8; the only difference with respect to D8 would thus reside in the application on different crops.

The person skilled in the art would, however, not expect that the utility of such an effective known combination would be limited to a single crop.

Accordingly, he would try the use of such known combination on other crops and thus arrive at the claimed process.



In this context it is noted that the safening effect as demonstrated for the combination with dimethenamide in the submitted data is not considered to provide for a surprising advantage with respect to the teaching of D8. Such safening effect would be observed by the person skilled in the art when applying the teaching of D8 for similar reasons as why he would observe such effect when applying the teaching of the patent.

Accordingly, the use of dimethenamide is not considered to involve any inventive step. Therefore the subject-matter of claim 1 of the fourth auxiliary request is not considered to meet the requirements of Article 56 EPC.

Fifth auxiliary request

II.11 Amendments

Claims 1-9 of the fifth auxiliary request meet the requirements of Article 123(2) and (3) EPC.

The proprietor restricted claim 1 to the coherbicides for which data had been provided with letter of 8 June 2001.

The request is also considered admissible in the sense of Rule 57(a) EPC as it was conceived to overcome inventive step objections.

II.12 Novelty

The subject-matter of claims 1-9 is new in the sense of Article 54 EPC (cf. fourth auxiliary request).

II.13 Inventive step

The subject-matter of claims 1-9 has been restricted to combinations with coherbicides for which a safening effect has been substantiated.

Moreover, combinations with dimethenamide have been deleted.

An inventive step is acknowledged for such subject-matter for the reasons set out above in the context of the fourth auxiliary request.



II.14 The opponent did not raise any objections on admissibility, novelty or inventive step of the present request.

During Oral Proceedings an amended description was filed, which is in line with claims 1-9 of the present request and which was approved by the opponent.

II.15 Accordingly, in view of the amendments made in accordance with the fifth auxiliary request, the patent is considered to meet the requirements of the EPC.

Application No.:

97 940 156.9

Patent No.:

EP-B-930823

A copy of the communication (communication/decision/minutes) was printed for and notified to each of the following representatives/parties:

Syngenta Participations AG
Intellectual Property,
P.O. Box
4002 Basel
SUISSE

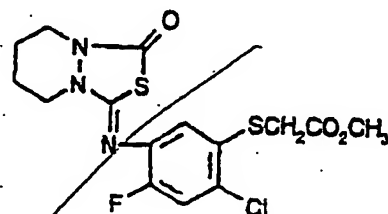
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BASF Aktiengesellschaft

D-67056 Ludwigshafen
ALLEMAGNE

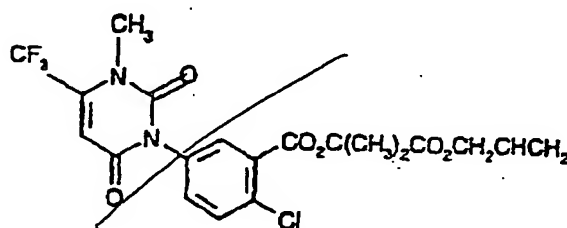
Description

[0001] The present invention relates to a new process for the control of weeds in useful plant cultivations, for example in the cultivation of maize, soya, cotton, rape, beet and sugar cane, which are resistant to phospho-herbicides.

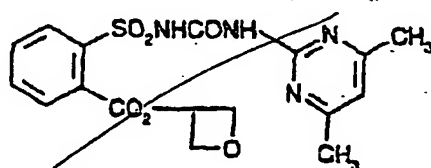
[0002] The phospho-herbicides glufosinate and glyphosate are described for example in The Pesticide Manual, Tenth Edition, 1994, Crop Protection Publications, BCPC. In addition, the following herbicides are similarly known: prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide, metolachlor, fluometuron, propaquizafop, atrazine, ametryn, terbutylazine, simazine, clodinafop, norflurazon, as well as prometryn. The S-enantiomer of metolachlor is known from US 5.002.606; the S-enantiomer of dimethenamide from US 5.457.985. The metabolite NOA-402989 is known from the Zeitschrift für Pflanzenkrankheiten und Pflanzenschutz, Sonderheft X, 355-360 (1984) as 3-phenyl-4-hydroxy-6-chloropyridazine. The compound of formula



is described for example in US 4.671.819; US 5.183.492 discloses the compound of formula



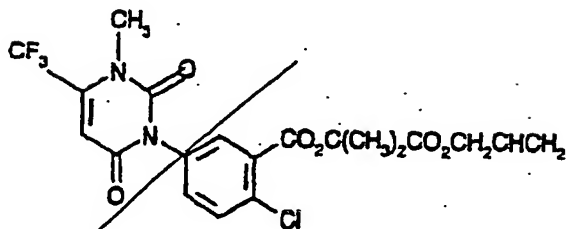
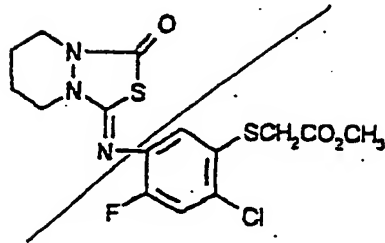
and the compound of formula



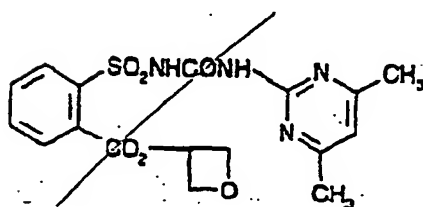
is known from EP-A-498-781.

[0003] It has now surprisingly been found that a quantitatively variable combination of phospho-herbicides selected from the group comprising glufosinate and glyphosate with at least one of the above-listed other herbicides exhibits a synergistic effect which is capable of controlling the majority of weeds occurring preferably in useful plant cultivations that are resistant to glufosinate or glyphosate, both in pre-emergence and in post-emergence, without significantly damaging the useful plants.

[0004] Therefore, according to the present invention, a new process is proposed for the control of weeds in the cultivation of useful plants that are resistant to phospho-herbicides, the process being characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide and its S-enantiomer, metolachlor and its S-enantiomer, fluometuron, propaquizafop, atrazine, clodinafop, norflurazon, ametryn, terbutylazine, simazine, prometryn, NOA-402989, as well as the compounds of formulae



and



Is allowed to take effect on the cultivated plant or its habitat, with the provision that compositions containing glufosinate and metolachlor, glufosinate and atrazine, glufosinate and metolachlor and atrazine, as well as glufosinate and atrazine and dicamba are not used in glufosinate-resistant maize, and further that compositions containing glyphosate and atrazine are not used in glyphosate-resistant maize, and compositions containing glyphosate and metolachlor or glyphosate and dimethenamide are not used in glyphosate-resistant soya.

[0005] It is highly surprising that the combination of a phospho-herbicide such as glufosinate or glyphosate with at least one of the above-mentioned further herbicides surpasses the additional effect to be expected in principle on the weeds to be controlled, and thus extends the limits of activity of both active ingredients in particular in two different respects.

[0006] On the one hand, the application amounts of the individual compounds applied are reduced, whilst maintaining a good level of activity. On the other hand, the composition used according to the invention still achieves a high rate of weed control where the individual substances have become no longer agronomically useful in small application amounts. The consequence of this is a considerable widening of the weed spectrum and an additional increase in selectivity for useful plant cultivations, which is necessary and desired in the case of an unintentional overdose of active ingredient. In addition, the composition according to the invention allows greater flexibility of subsequent cultivations whilst maintaining the outstanding control of weeds in useful plants.

[0007] The herbicide mixture used according to the invention may be used on glufosinate- or glyphosate-resistant useful plants, especially maize, cotton, rape, sugar beet, sugar cane and soya, against a large number of agronomically important weeds, such as *Stellaria*, *Nasturtium*, *Agrostis*, *Digitaria*, *Avena*, *Setaria*, *Snapsis*, *Lolium*, *Solanum*, *Phaseolus*, *Echinochloa*, *Scirpus*, *Monochoria*, *Sagittaria*, *Brumus*, *Alopecurus*, *Sorghum halepense*, *Rottboellia*, *Cyperus*, *Abutilon*, *Sida*, *Xanthium*, *Amaranthus*, *Chenopodium*, *Ipomoea*, *Chrysanthemum*, *Galium*, *Viola* and *Veronica*. It may also be used for non-selective weed control and for all application methods that are usual in agriculture, e.g. pre-emergent application, post-emergent application and seed disinfecting.

[0008] Useful plant cultivations which are tolerant towards the herbicide glufosinate or glyphosate are preferably

produced with the assistance of biotechnological methods. The assistance of biotechnological processes can be restricted to the usage of cell-biological selection processes, which are carried out in such cases preferably on cell or callus cultures that are capable of regeneration, so as to finally develop glufosinate- or glyphosate-tolerant plants. However, since precise knowledge is available about the mechanism of activity of these herbicides, gene technology

may also be employed.

[0009] Resistance towards glufosinate may be essentially attained by two different experimental setups. On the one hand, the herbicide target which in the case of glufosinate is represented by the enzyme glutamine synthetase may be selected as the point of attack for the development of resistance. On the other hand, the herbicidally active substance itself may serve as the starting point for the development of resistance. For example, glufosinate tolerance may be effected through the transgenic expression of an enzyme which converts glufosinate into a physiologically inactive form.

[0010] The first set-up makes use of the knowledge of the site of action or the point of attack of glufosinate, namely the enzyme glutamine synthetase. The desired tolerance may thus be effected by over-expression of the enzyme in plants or preferably by transgenic expression of variants of the enzyme which are tolerant to the effect of glufosinate.

[0011] Glufosinate-tolerant plants are thus produced e.g. by amplifying the herbicide target in the plant. Such gene amplification is achieved for example by exposing plant cell cultures to selection pressure, and further cultivating the resistant variants or strains obtainable in this way and regenerating them into whole plants. The said resistant cell strains may also be fused with an appropriate receptor cell line in the manner of a protoplast fusion, and regenerated into whole plants. Alternatively, the desired gene amplification may also be attained with the assistance of genetic engineering, whereby the number of wild type genes in the plant genome of sensitive plants is increased by inserting further wild type gene replications: The source of wild type genes which encode the enzyme glutamine synthetase may be both procaryotes and especially eucaryotes. The eucaryotes are presented in particular by plant sources, e.g. various species of potato (*Solanum tuberosum*), tomato (*Lycopersicon esculentum*), pepper (*Capsicum annum*), tobacco (*Nicotiana tabacum*), brassica, especially *Brassica napus*, various leguminosae e.g. alfalfa (*Medicago sativa*), clover (*Trifolium sp.*), soya (*Glycine max*), various species of bean (*Phaseolus sp.*, *Vici sp.*, *Vigna sp.*), peas (*Pisum sativum*), various root crops, e.g. *Beta vulgaris*, carrots (*Daucus carota*), sweet potatoes (*Ipomoea batatas*) as well as others, for example *Arabidopsis thaliana*.

[0012] Glufosinate-tolerant plants may also be produced by inserting genes that encode a mutated glutamine synthetase enzyme which is resistant towards the inhibitory activity of glufosinate.

[0013] As in the case of the above-mentioned wild type genes, these are cloned into expression cassettes developed especially for plants, and are transformed into the desired host plant. Appropriate expression signals (essentially promoter and termination signals, as well as signal and enhancer sequences), which are recognised by the plant cell and lead to effective expression of the respective gene products in the transformed plant, and which may be employed within the said expression cassettes, are most familiar to the person skilled in the art.

[0014] The processes for the production of such glufosinate-tolerant plants are described in detail in international applications having publication nos. WO 86/02097 and WO 87/05627, and reference thereto is incorporated in the present application.

[0015] The recombinant DNA molecules thus produced may be inserted into the plant by means of various transformation processes known to the person skilled in the art, and brought to expression there. The person skilled in the art is aware that the choice of an appropriate method is dependent in particular on the species of plant respectively selected. Suitable transformation processes include for example micro-injection (Crossway et al., Bio Techniques 4: 320-334 (1986)), electroporation (Riggs et al, Proc. Natl. Acad. Sci. USA 83:5602-5606 (1986), *Agrobacterium*-mediated transformation (Hinchey et al., Biotechnology 6:915-921 (1988)), direct gene transfer processes (Paszowski et al., EMBO J. 3:2717-2722 (1984)), as well as ballistic processes using micro-projectiles ('ballistic particle acceleration') [see for example Sanford et al., U.S. Patent 4,945,050; and McCabe et al., Biotechnology 6:923-926 (1988)].

[0016] One especially preferred process for inserting recombinant DNA molecules into maize plants is described in the international application having publication no. WO 93/07278 and EP-A 0 292 435, and reference thereto is incorporated in the present application.

[0017] As has already been mentioned, glufosinate-tolerant plants may also be produced by aiming at the herbicidally active compound as such and inactivating it. Thus, for example, genes may be isolated from the streptomycetes strains *S. hygroscopicus* and *S. viridochromogenes*, which were selected for bialaphos or phosphinotricine (= glufosinate) resistance, and these genes encode an enzyme which acetylates the free NH₂ group of glufosinate and thus transforms it to a non-herbicidally active compound. The transgenic expression of these phosphinotricine acetyl-transferase genes in useful plants is capable of eliminating the locking-up of the nitrogen metabolism in the plant by the glufosinate and leads to glufosinate tolerance of said plants.

[0018] The efficiency of expression of recombinant DNA molecules of bacterial origin in plants may be controlled by the production of synthetic genes. For example, genes of streptomycetes normally possess a very high G/C proportion of up to 70%, which may be reduced to the usual amount for plant genes of ca. 50% by resynthesis of the gene, whilst taking into account the usual codon usage of plants.

[0019] The efficiency of expression may normally be further increased by optimising the codon usage in such a way that only those codons that are most preferred in the respective target plant, for example maize, are used for gene resynthesis. Further details relating to the construction of synthetic genes which have been optimised for expression in maize may be found e.g. in the international application having publication no. WO 93/07278.

The glufosinate-tolerant plants obtainable in this way may then be propagated, i.e. produced, by means of conventional cultivation methods, whereby the glufosinate tolerance is passed on to subsequent generations by transmission.

The processes for the production of such glufosinate-tolerant plants are described in detail in the European applications having the publication nos. EP-A 242 236, EP-A 242 246,

EP-A 257 542 and EP-A 275 957 and reference thereto is incorporated in the present application.

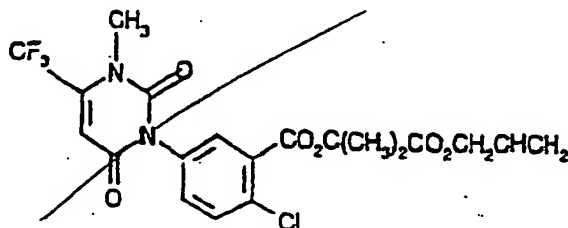
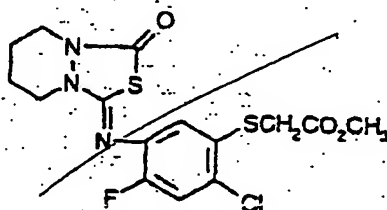
[0020] Glyphosate-resistant plants may be produced in a similar manner, whereby a gene is used which codes for a glyphosate-tolerant EPSP synthase, as is described in EP-A-115673 and EP-A-409815.

[0021] By the expression plants or useful plant cultivations that are resistant to the herbicide glufosinate or glyphosate, as is employed in the present application, are understood also plants or useful plant cultivations which are resistant to those herbicides that are metabolised in the plant or in the useful plant cultivations to glufosinate, as is the case for example when using bilanafos, or to glyphosate.

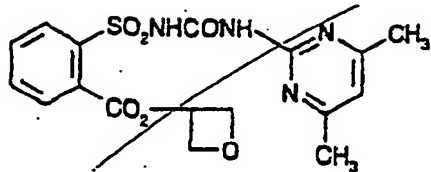
[0022] Maize which is resistant to glufosinate was treated with a tank mixture containing glufosinate and atrazine according to Res. Rep. North Cent. Weed Sci. Soc., 51, 169-170, 1994. Further tank mixtures for use in glufosinate-resistant maize are described in Res. Rep. Expert Comm. Weeds East Can., 1, 242-243, 1995 and Res. Rep. Expert Comm. Weeds East Can., 1, 205-206, 1995. The treatment of glyphosate-resistant maize or glyphosate-resistant soya with mixtures of glyphosate and atrazine, metolachlor or dimethenamide is described in Abstr. Meet. Weed Sci. Soc. Am. 37, 87, 1997, Res. Rep. North Cent. Weed Sci. Soc., 52, 426-427, 1995 and Res. Rep. North Cent. Weed Sci. Soc., 52, 266-267, 1995.

[0023] The active ingredient combination used according to the invention contains glufosinate or glyphosate and at least one of the other herbicides in any ratio of the mixture, normally with an excess of one component over the other. Preferred ratios between glufosinate or glyphosate and the components in the mixture lies between 1 : 100 and 1 : 0.001.

[0024] A preferred process according to the present invention is characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising presulfuron, primisulfuron, dicamba, pyridate, dimethenamide, metolachlor and its S-enantiomer, fluometuron, propaquizafop, ~~atrazine~~, ametryn, terbutylazine, simazine, prometryn, as well as the compounds of formulae

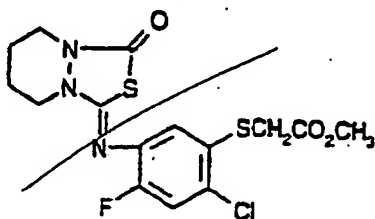


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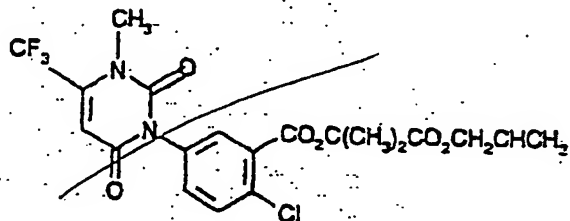


10 is allowed to take effect on the cultivated plant or its habitat.

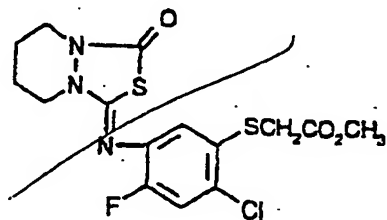
[0025] Mixtures that have proved to be especially effective when the useful plant cultivation relates to maize, which is resistant to glufosinate and/or glyphosate, are combinations of glufosinate or glyphosate with a synergistic amount of ~~at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide as well as its S-enantiomer, metolachlor as well as its G-enantiomer, atrazine, NOA 402989, ametryn, terbutylazine, simazine, prometryn, as well as the compounds of formulae~~



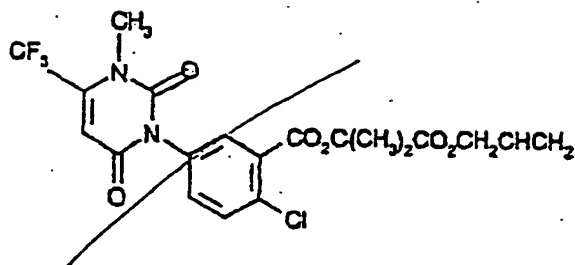
25 and in particular



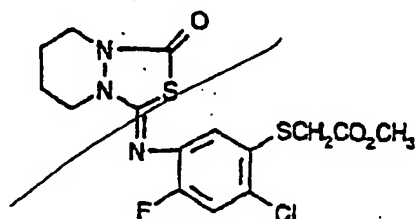
35 or combinations of glufosinate with a synergistic amount of ~~at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide, metolachlor as well as its S-enantiomer, atrazine, ametryn, terbutylazine, simazine, prometryn, as well as the compounds of formulae~~



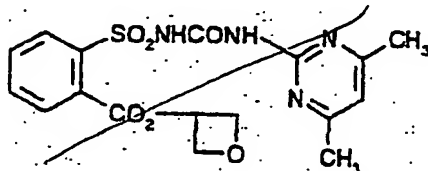
45 and



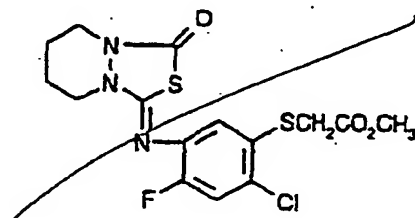
~~[0026] When the useful plant cultivation relates to soya, which is resistant to glufosinate and/or glyphosate, it is preferable to use a composition which contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor as well as its S-enantiomer and the compounds of formula~~



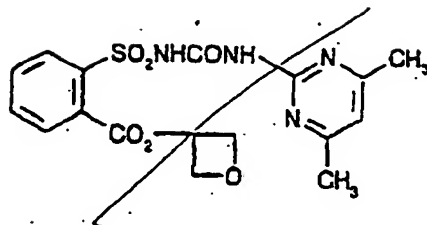
~~and in particular~~



~~or a composition which contains glufosinate and at least one further herbicide selected from the group comprising metolachlor as well as its S-enantiomer and the compounds of formulae~~



and



[0027] In cotton cultivations, which are resistant to glufosinate and/or glyphosate, a composition is preferably employed which contains glufosinate or glyphosate and a synergistic amount of fluometuron, or which contains glufosinate and a synergistic amount of fluometuron.

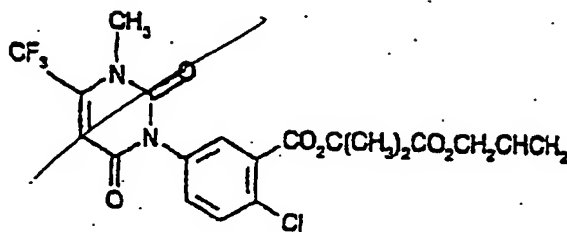
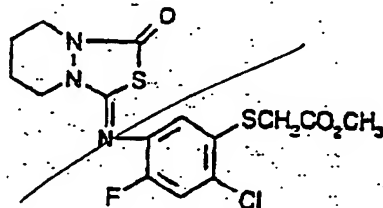
[0028] In rape or beet cultivations, which are resistant to glufosinate and/or glyphosate, a composition is preferably selected which contains glufosinate or glyphosate and a synergistic amount of propaquizafop, or which contains glufosinate and a synergistic amount of propaquizafop.

[0029] When the useful plant cultivation concerned is sugar cane, which is resistant to glufosinate and/or glyphosate, it is preferable to use a composition which contains glufosinate or glyphosate and a synergistic amount of ametryn, or a composition containing glufosinate and a synergistic amount of ametryn.

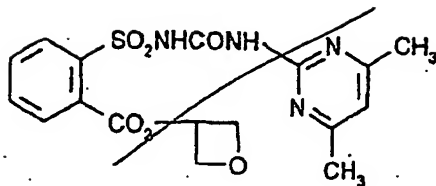
[0030] The amount applied may vary within a wide range, and depends on the nature of the soil, the type of application (pre- or post-emergent; seed disinfecting; usage in the seed drill; no tillage application etc.), the plant cultivated, the weed to be controlled, the prevalent climatic conditions and other factors determined by the type of application, time of application and target cultivation. In general, the active ingredient mixture used according to the invention may be used at an application rate of 0.3 to 4.0 kg active ingredient mixture per hectare.

[0031] In the composition used according to the invention, glufosinate or glyphosate is preferably present in a weight ratio of 1 : 10 to 1000 : 1 in relation to the other herbicide(s).

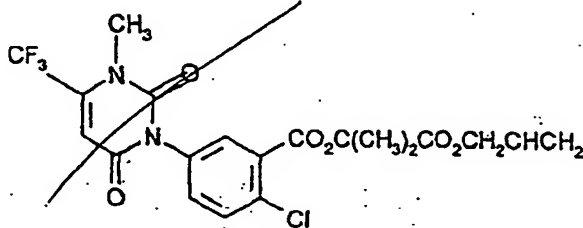
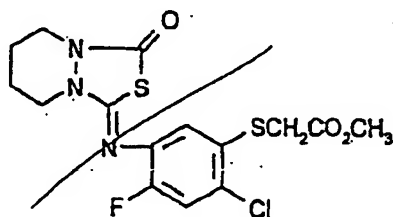
[0032] The herbicidal compositions which contain, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, rimsulfuron, pyridate, dimethenamide and its *S*-enantiomer, the *S*-enantiomer of metolachlor, fluometuron, propaquizafop, clodinafop, norflurazon, ametryn, terbutylazine, simazine, prometryn, NOA 402986, as well as the compounds of formulae



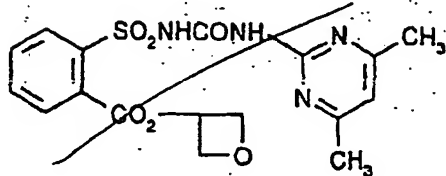
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as well as the herbicidal compositions which contain, in addition to the usual inert formulation assistants, glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising ~~prosulfuron, primisulfuron, dicamba, pyridate, the S-enantiomer of dimethonamide, the S-enantiomer of metolachlor, fluometuron, propanil, quizalofop, and~~ clodinafop, ~~norflurazon, ametryn, prometryn, NOA 402989~~, as well as the compounds of formulae



and



are new and form a further object of the present invention.

[0033] Both glufosinate and/or glyphosate and the other herbicides may be used in unchanged form, i.e. as they occur during synthesis, but they are preferably processed in conventional manner with the assistants which are customary in formulation technology, such as solvents, solid carriers or surfactants, e.g. into emulsifiable concentrates, directly sprayable or dilutable solutions, spray powders, soluble powders, dusting compositions, granulates or microcapsules. The application processes such as spraying, atomizing, dusting, sprinkling, dispersing or pouring are selected according to the aims strived for and the given conditions, in the same way as for the type of composition.

[0034] The formulations, i.e. the compositions, preparations or compositions containing the active ingredient glufosinate or glyphosate and the other herbicides as well as optionally one or several solid or liquid formulating assistants, are produced in a manner known *per se*, e.g. by intimately mixing and/or grinding the active ingredients with the formulating assistants such as solvents or solid carriers. In addition, surface-active compounds (surfactants) may be used when producing the formulations.

[0035] The solvents in question may be: aromatic hydrocarbons, preferably fractions C₈ to C₁₂, such as xylene mix-

tures or substituted naphthalenes, phthalic acid esters such as dibutyl or dioctyl phthalate, aliphatic hydrocarbons such as cyclohexane or paraffins, alcohols and glycols, as well as the ethers and esters thereof, such as ethanol, ethylene glycol, ethylene glycol monomethyl- or -ethyl-ether, ketones such as cyclohexanone, strongly polar solvents such as N-methyl-2-pyrrolidone, dimethyl sulphoxide or N,N-dimethylformamide, as well as optionally epoxidated vegetable oils such as epoxidated coconut oil or soyabean oil; or water.

[0036] The solid carriers employed e.g. for dusting compositions and dispersible powders are normally natural mineral powders, such as calcite, talc, kaolin, montmorillonite or attapulgite. To improve the physical properties of the formulation, highly disperse silicic acid or highly disperse absorbent polymerisates may also be added. The granular, adsorptive granulate carriers employed may be porous types such as pumice, brick fragments, sepiolite or bentonite, and the non-absorbent carrier materials are e.g. calcite or sand. Moreover, a number of pregranulated materials of inorganic or organic nature may also be used, especially dolomite or pulverized plant residue.

[0037] Depending on the type of active ingredient to be formulated, the surface-active compounds may be non-ionic, cationic and/or anionic surfactants and surfactant mixtures having good emulsifying, dispersing and wetting properties.

[0038] Appropriate anionic surfactants may be both so-called water-soluble soaps and water-soluble synthetic surface-active compounds.

[0039] Soaps which may be mentioned are the alkali salts, alkaline earth salts or optionally substituted ammonium salts of higher fatty acids (C_{10} - C_{22}), e.g. the Na or K salts of oleic or stearic acid, or of natural fatty acid mixtures, which may be obtained e.g. from coconut oil or tallow oil. Furthermore, the fatty acid methyl-taurine salts may also be mentioned.

[0040] More frequently however, so-called synthetic surfactants are used, especially fat alcohol sulphonates, fat alcohol sulphates, sulphonated benzimidazole derivatives or alkylaryl sulphonates.

[0041] The fat alcohol sulphonates or sulphates are normally present as alkali salts, alkaline earth salts or optionally substituted ammonium salts and have an alkyl radical with 8 to 22 C-atoms, whereby alkyl also includes the alkyl moiety of acyl radicals, e.g. the Na or Ca salt of lignin sulphonic acid, of dodecylsulphuric acid ester or of a fat alcohol sulphate mixture produced from natural fatty acids. This also includes the salts of sulphuric acid esters and sulphonic acids of fat alcohol/ethylene oxide adducts. The sulphonated benzimidazole derivatives preferably contain 2 sulphonic acid groups and one fatty acid radical with 8-22 carbon atoms. Alkylaryl sulphonates are e.g. the Na, Ca or triethanolamine salts of dodecylbenzenesulphonic acid, of dibutyl-naphthalene-sulphonic acid or of a naphthalene-sulphonic acid / formaldehyde condensation product

[0042] The corresponding phosphates such as the salts of the phosphoric acid ester of a p-nonylphenol-(4-14)-ethylene oxide adduct or phospholipids may also be considered.

[0043] The non-ionic surfactants may be primarily polyglycol ether derivatives of aliphatic or cycloaliphatic alcohols, saturated or unsaturated fatty acids and alkylphenols, which may contain 3 to 30 glycol ether groups and 8 to 20 carbon atoms in the (aliphatic) hydrocarbon radical and 6 to 18 carbon atoms in the alkyl radical of the alkylphenols.

[0044] Further appropriate non-ionic surfactants are the water-soluble polyethylene oxide adducts to polypropylene glycol, ethylenediamino-polypropylene glycol and alkyl-polypropylene glycol, containing 20 to 250 ethylene glycol ether groups and 10 to 100 propylene glycol ether groups, with 1 to 10 carbon atoms in the alkyl chain. The said compounds normally contain 1 to 5 ethylene glycol units per propylene glycol unit.

[0045] Examples of non-ionic surfactants which may be mentioned are nonylphenol polyethoxy ethanols, castor oil polyglycol ether, polypropylene-polyethylene oxide adducts, tributylphenoxy-polyethoxy ethanol, polyethylene glycol and octylphenoxy-polyethoxy ethanol.

[0046] Fatty acid esters of polyoxyethylene sorbitan, such as polyoxyethylene sorbitan trioleate, may also be considered.

[0047] The cationic surfactants in question are in particular quaternary ammonium salts, which contain as the N-substituents at least one alkyl radical with 8 to 22 C-atoms and as further substituents low, optionally halogenated alkyl, benzyl or low hydroxyalkyl radicals. The salts are preferably present as halides, methyl sulphates or ethyl sulphates, e.g. stearyl trimethylammonium chloride or benzyl-di-(2-chloroethyl)-ethylammonium bromide.

[0048] The surfactants which are customary in formulation techniques and which may also be used in the compositions according to the invention are described *inter alia* in "Mc Cutcheon's Detergents and Emulsifiers Annual" MC Publishing Corp., Ridgewood New Jersey, 1981, Stache, H., "Tensid-Taschenbuch", Carl Hanser Verlag, Munich/Vienna, 1981 and M. and J. Ash, "Encyclopedia of Surfactants", Vol I-III, Chemical Publishing Co., New York, 1980-81.

[0049] The herbicide formulations normally contain 0.1 to 99 % by weight, especially 0.1 to 95% by weight of active ingredient mixture, 1 to 99.9 % by weight of a solid or liquid formulation excipient and 0 to 25 % by weight, especially 0.1 to 25% by weight of a surfactant.

[0050] While concentrated compositions are usually preferred as a commercial product, the final user normally uses diluted compositions.

[0051] The compositions may also contain further additives such as stabilizers, e.g. optionally epoxidated plant oils (epoxidated coconut oil, rapeseed oil or soyabean oil), defoamers, e.g. silicone oil, preservatives, viscosity regulators,

binding compositions, adhesives, as well as fertilizers or other active ingredients.

[0052] Preferred formulations are made up in particular as follows:

(% = percent by weight)

Emulsifiable concentrates:

active ingredient mixture	1 to 90%, preferably 5 to 20%
surface-active composition	1 to 30%, preferably 10 to 20%
liquid carrier	5 to 94%, preferably 70 to 85%

Dusts:

active ingredient mixture	0.1 to 10%, preferably 0.1 to 5%
solid carrier	99.9 to 90%, preferably 99.9 to 99%

Suspension concentrates:

active ingredient mixture	5 to 75%, preferably 10 to 50%
water	94 to 24%, preferably 88 to 30%
surface-active composition	1 to 40%, preferably 2 to 30%

Wettable powders:

active ingredient mixture	0.5 to 90%, preferably 1 to 80%
surface-active composition	0.5 to 20%, preferably 1 to 15%
solid carrier material	5 to 95%, preferably 15 to 90%

Granulates:

active ingredient mixture	0.1 to 30%, preferably 0.1 to 15%
solid carrier material	99.5 to 70%, preferably 97 to 85%

[0053] The following examples illustrate the invention further without restricting it.

Formulation examples for the active ingredient mixtures used according to the invention
(% = percent by weight)

F1. Emulsion concentrates	a)	b)	c)	d)
active ingredient mixture	5%	10%	25%	50%
Ca dodecylbenzene sulphonate	6%	8%	6%	6%
castor oil polyglycol ether (36 mols EO)	4%	--	4%	4%
octylphenol polyglycol ether (7-8 mols EO)	--	4%	--	2%
cyclohexanone	--	--	10%	20%
arom. hydrocarbon mixture C ₉ -C ₁₂	85%	78%	55%	16%

[0054] Emulsions of each desired concentration may be produced from such concentrates by dilution with water.

F2. Solutions	a)	b)	c)	d)
active ingredient mixture	5%	10%	50%	90%
1-methoxy-3-(3-methoxypropoxy)-propane	--	20%	20%	--
polyethylene glycol MW 400	20%	10%	-	--
N-methyl-2-pyrrolidone	--	--	30%	10%

(continued)

F2. Solutions	a)	b)	c)	d)
arom. hydrocarbon mixture C ₉ -C ₁₂	75%	60%		

[0055] The solutions are suitable for application in the form of the smallest droplets.

F3. Spray powder	a)	b)	c)	d)
active ingredient mixture	5%	25%	50%	80%
Na lignin sulphonate	4%	--	3%	--
Na lauryl sulphate	2%	3%	--	4%
Na diisobutyl naphthalene sulphonate	--	6%	5%	6%
octylphenyl polyglycol ether (7-8 mols EO)	--	1%	2%	--
highly disperse silicic acid	1%	3%	5%	10%
kaolin	88%	62%	35%	--

[0056] The active ingredient is mixed well with the additional materials and ground well in an appropriate mill. Spray powders are obtained, which may be diluted with water to suspensions of any desired concentration.

F4. Coated granules	a)	b)	c)
active ingredient mixture	0.1%	5%	15%
highly disperse silicic acid	0.9%	2%	2%
inorg. carrier material (Ø 0.1 - 1 mm) such as CaCO ₃ or SiO ₂	99.0%	93%	83%

[0057] The active ingredient is dissolved in methylene chloride, sprayed onto the carrier and the solvent subsequently evaporated in a vacuum.

F5. Coated granules	a)	b)	c)
active ingredient mixture	0.1%	5%	15%
polyethylene glycol MW 200	1.0%	2%	3%
highly disperse silicic acid	0.9%	1%	2%
inorg. carrier material (Ø 0.1 - 1 mm) such as CaCO ₃ or SiO ₂	98.0%	92%	80%

[0058] The finely ground active ingredient is evenly applied in a mixer onto the carrier material which has been moistened with polyethylene glycol. In this way, dust-free coated granules are obtained.

F6. Extrusion granules	a)	b)	c)	d)
active ingredient mixture	0.1%	3%	5%	15%
Na lignin sulphonate	1.5%	2%	3%	4%
carboxymethyl cellulose	1.4%	2%	2%	2%
kaolin	97.0%	93%	90%	79%

[0059] The active ingredient is mixed with the additives, ground and moistened with water. This mixture is extruded and subsequently dried in a current of air.

F7. Dusting composition	a)	b)	c)
active ingredient mixture	0.1%	1%	5%
talcum	39.9%	49%	35%

(continued)

F7. Dusting composition	a)	b)	c)
kaolin	60.0%	50%	60%

[0060] By mixing the active ingredient with the carrier materials and grinding in an appropriate mill, a dusting composition is obtained which is ready for use.

F8. Suspension concentrates	a)	b)	c)	d)
active ingredient mixture	3%	10%	25%	50%
ethylene glycol	5%	5%	5%	5%
nonylphenol polyglycol ether (15 mols EO)	--	1%	2%	--
Na lignin sulphonate	3%	3%	4%	5%
carboxymethyl cellulose	1%	1%	1%	1%
37% aqueous formaldehyde solution	0.2%	0.2%	0.2%	0.2%
silicone oil emulsion	0.8%	0.8%	0.8%	0.8%
water	87%	79%	62%	38%

[0061] The finely ground active ingredient is intimately mixed with the additives. In this way, a suspension concentrate is obtained, from which suspensions of any desired concentration may be prepared by dilution with water.

[0062] It is often more practical to formulate the active ingredients individually and then, shortly prior to placing in the applicator, to bring them together in water in the desired mixture ratio as a "tank mixture".

Biological examples

Test description (pre-emergent treatment)

[0063] Monocotyledonous and dicotyledonous weeds and cultivated plants are sown in small plastic pots in standard soil. Directly after sowing, the test substances are applied in aqueous suspension (500 l water/ha). Subsequently, the test plants are raised under glass under optimum conditions. Evaluation takes place 3 weeks after application using a nine-stage appraisal scale (1 = complete damage, 9 = no effect). Appraisal marks of 1 to 4 (especially 1 to 3) indicate good to very good herbicide activity. Appraisal marks of 6 to 9 (especially 7 to 9) show good to very good tolerance of cultivated plants.

Test description (post-emergent treatment)

[0064] Monocotyledonous and dicotyledonous weeds and cultivated plants are raised under glasshouse conditions in small plastic pots in standard soil. Application of the test substances takes place at the 3 to 6 leaf stage of the test plants. The test substances are applied in aqueous suspension (500 l water/ha) at application rates of 5 to 5000 g/ha active substance).

[0065] Evaluation takes place 3 weeks after application using a nine-stage appraisal scale (1 = complete damage, 9 = no effect). Appraisal marks of 1 to 4 (especially 1 to 3) indicate good to very good herbicide activity. Appraisal marks of 6 to 9 (especially 7 to 9) show good to very good tolerance of cultivated plants.

[0066] In these tests, the herbicide mixtures used according to the invention show good control of the weeds.

Claims

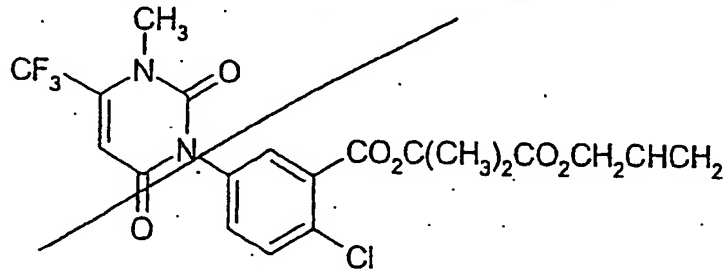
1. Process for the control of weeds in cultivations of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, dicamba, pyridate, dimethenamid and its S-enantiomer, metolachlor and its S-enantiomer, fluometuron, propaquizafop, atrazine, clodinafop, norflurazone, ametryn, terbutylazine, simazine, prometryn, NOA-402989, as well as the compounds of formulae

CLAIMS:

~~First~~
Fifth Auxiliary Request

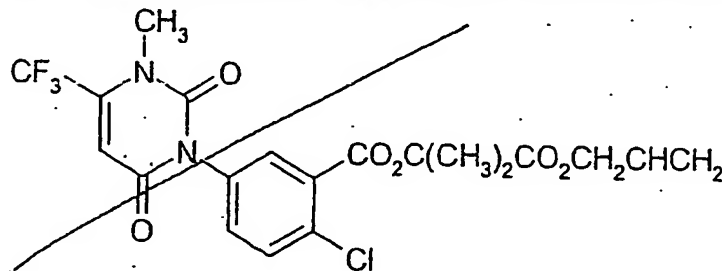
[Signature]

1. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, fluometuron, propaquizafop, atrazine, clodinafop, norflurazone, ametryn, terbutylazine, simazine, prometryn, NCA-402089, as well as the compound of formula



is allowed to take effect on the cultivated plant or its habitat, with the provision that ~~compositions containing glufosinate and atrazine, as well as glufosinate and atrazine and dicamba are not used in glufosinate-resistant maize, and further that compositions containing glyphosate and atrazine are not used in glyphosate-resistant maize, and compositions containing glyphosate and dimethenamide are not used in glyphosate-resistant soya~~

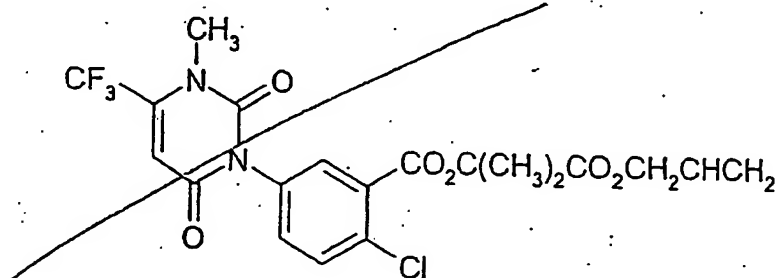
2. Process according to claim 1 for the control of weeds in cultivations of useful plants which are resistant to the herbicide glufosinate, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, fluometuron, propaquizafop, atrazine, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula



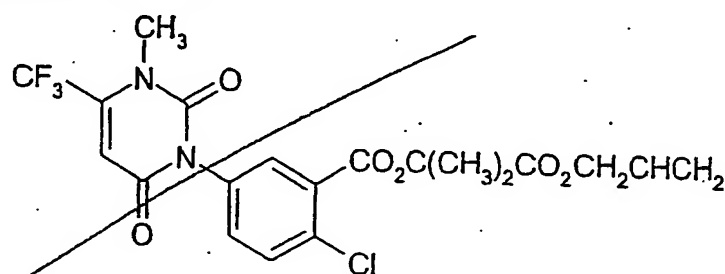
is allowed to take effect on the cultivated plant or its habitat.

3. Process according to claim 1, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, atrazine,

NOA-402989, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula



4. Process according to claim 3, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, atrazine, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula



5. Process according to claim 1, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of fluometuron.

6. Process according to claim 5, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of fluometuron.

5.7. Process according to claim 1, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of propaquizafop.

5.8. Process according to claim 5, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of propaquizafop.

~~9. Process according to claim 1, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of ametryn.~~

~~10. Process according to claim 9, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of ametryn.~~

711. Process according to claim 1, characterised in that the useful plant cultivations are treated with the said composition at application rates corresponding to 0.3 to 4/0 kg total active ingredient per hectare.

8 12. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, ~~norflurazone and~~ NOA 402989.

9 13. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, and ~~NOA 402989~~.

~~14. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate, and a synergistic amount of ^{dicamba} at least one further herbicide selected from the group comprising metolachlor and its ~~s~~-enantiomer is allowed to take effect on the cultivated plant or its habitat, and wherein the composition provides an increase in the selectivity for said useful plant cultivations.~~

15. Process according to claim 14, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate.

16. Process according to claim 14, characterised in that the useful plant being cultivated ~~is soy which is resistant to glufosinate.~~

After deliberation of the opposition division,

- the chairman announced the following decision:

"Account being taken of the amendments made by the patent proprietor during the opposition proceedings, the patent and the invention to which it relates are found to meet the requirements of the European Patent Convention. The currently valid documents are those according to the fifth auxiliary request."

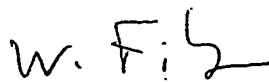
Regarding the reasons for the decision, the chairman referred to:

Article 102(3) EPC.

The chairman closed the oral proceedings on 24.11.2005 at 14:30 hours.



Steendijk, M
Chairman



Fitz, W
Minute Writer

Annex(es):
fourth auxiliary request, fifth auxiliary request,
amended description pages

Form 2339.4

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25. Okt. 2005

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97940156.9

24 October 2005

o.p. 24.11.05!

Opposition to European Patent No. 0930823
Our Ref: PH/5-21028/EP

Dear Sirs,

In respect of this Opposition, we refer to your letter dated 14th June 2005 containing a summons to attend oral proceedings, pursuant to Rule 71(1) EPC, due to be held at 0900h on 24th November 2005.

I confirm that the undersigned will attend the oral proceedings to represent the Proprietor. Also attending the oral proceedings will be Dr. Kathryn Elliott; Dr. Elliott is a European Patent Attorney employed by Syngenta Limited, and if the situation requires it, will also speak at the oral proceedings.

We note that the language of the proceedings is English. However, should the Opponent or any member of the Opposition Board chooses to speak in a language other than English, we request that the European Patent Office provides, at its own expense, simultaneous translation as appropriate.

Attached to this letter as an Appendix is a new main request and three auxiliary requests. We reserve the right to submit further auxiliary requests during the oral proceedings should this be necessary.

Main Request

In the main request, reference to prosulfuron and primisulfuron have been deleted from claims 1, 2, 3 and 4; reference to fluometuron from claim 14 and 15 and reference to fluthiacet-methyl has been deleted from claim 15. Accordingly, we submit that the claims are now novel over documents D1, D4, D11 and D18 as referred to in the Provisional Opinion.

In the Provisional Opinion, the Board state that D8 describes the use of mixtures of glyphosate and dimethenamide in glyphosate resistant soybeans and thus anticipates the subject-matter of claim 1. Claim 1, final line, excludes compositions containing glyphosate and dimethenamide for use on glyphosate-resistant soya (the terms 'soya' and 'soybeans' are synonymous). Therefore, the disclosure in D8 is outside the scope of claim 1 and claim 1 is novel over D8.

D6 relates to the development of glyphosate resistance in plants. Of relevance for claim 1 of the opposed patent, D6 refers to the use of formulations of glyphosate to protect these plants from weeds and, in particular, D6 suggests that glyphosate may be used in combination with metolachlor for control of weeds on glyphosate resistant corn (see column 7, lines 17 to 25 of D6).

However, it is submitted that D6 is not an enabling disclosure for use of this combination of herbicides on glyphosate resistant corn because:

1. D6 is not enabled for the transformation and regeneration of corn *per se*;
2. D6 is not enabled for the production of any glyphosate resistant plants, let alone glyphosate resistant corn plants.

1. D6 is not enabled for the transformation and regeneration of corn

D6 is a US patent which was granted in 1992. However, the original application from which D6 ultimately claims priority was filed on January 5, 1983. D6 itself was filed on August 30, 1988, as a continuation of an application filed on February 4, 1985 (which, itself is a continuation-in-part of the application filed in 1983). Thus, the specification of D6 dates from, at the latest, February 4, 1985.

D6 refers to a number of methods for the transformation of eukaryotic cells and then specifies a number of methods that may be used to transform plant cells:

"For eukaryotic hosts, a wide variety of techniques may be employed for DNA introduction into the host, such as transformation with Ca⁺⁺-precipitated bare DNA, a plasmid or minichromosome, or microinjection with a micropipette. ... Episomal elements may be employed, such as tumor inducing plasmids, e.g., Ti, Ri or fragments thereof..."

[column 3, line 58 to column 4, line 1]

"With plant cells, the structural gene as part of a construction may be introduced into a plant cell nucleus by micropipette injection for integration by recombination into the host genome. Alternatively, temperate viruses may be employed into which the structural gene may be introduced for introduction into a plant host. ... Methods for introducing viruses and plasmids into plants are amply described in the literature. ... Of particular interest is the use of a tumor-inducing plasmid, e.g., Ti or Ri ..."

[column 6, lines 8 to 30]

The only point at which regeneration of transformed plant cells is disclosed is in the Example relating to transformation and regeneration of tobacco leaf slices at column 14, lines 9 to 32.

It can therefore be seen that the details contained within D6 relating to transformation and regeneration of plants is sparse. Certainly, the disclosure of D6 adds nothing to what was generally known in the art at the time: D6 provides no specific methods or conditions for the transformation and regeneration of plant cells in general, let alone for the transformation and regeneration of corn in particular, which is well recognised as a particularly recalcitrant species.

The lack of methodology contained within D6 in this respect means that the skilled man would need to rely on other published documents to find methods for transforming and regenerating corn. However, as is well known, it was not possible, at the time at which D6 was filed, to transform and regenerate monocotyledonous plants because the techniques were simply not available: it is therefore clear that the specification of D6 does not include sufficient information to enable the skilled man to produce a transgenic corn plant.

As evidence of the above, the Opposition Division is referred to two US cases from the Court of Appeal of the Federal Circuit (both documents are enclosed as D22 and D23), where this issue was debated in detail. In the first, *In re Goodman* (D22), the US Courts found, after an in depth review of the state of the art, the following:

"Thus, on Goodman's 1985 filing date, the record shows no reliable gene transformation method for use with monocot plants. Each of the methods for monocot plants was fraught with unpredictability. ... The record shows that practicing a gene transformation method for all monocot plants, if possible at all in 1985, would have required extensive experimentation that would preclude patentability."

In reviewing potential transformation methods before coming to this conclusion, the Court made the following comments:

"Furthermore, the Board found that the specification taught only the Agrobacterium-mediated method of plant transformation. This method only works with dicotyledonous plant cells, not all 'plant cells'."

"Goodman's own 1987 article, Gene Transfer in Crop Improvement, 236 Science 48 (1987), underscores the "major block" to using the claimed method with monocot plant cells. Goodman reports: "Although data have been cited that Agrobacterium can transfer T-DNA to monocotyledonous hosts, clear evidence of T-DNA integration exists only for asparagus, and, even in that case, no transformed plants have been described."

"As an alternative method, Goodman suggests gene transfer by direct DNA uptake by the plant, accomplished using protoplasts instead of intact plant cells. This method could encompass monocot as well as dicot plants. Goodman's own report, however, undercuts this method:

... Integration into plant chromosomes of foreign DNA introduced by direct uptake is a relatively rare event ... [A]pplication of direct DNA uptake to the cereals [monocots] may be limited because regeneration of the whole plants from protoplasts has not yet been achieved for many cereal species.

Again, Goodman makes this unfavourable assessment in 1987, two years after the filing date."

"Goodman also asserts microinjection could transfer genes into all plant cells. Under the microinjection method, micropipettes are used to inject DNA solutions into cells. Goodman reported in 1987, however, that transformation by microinjection of plant cells only worked with protoplasts. As with direct DNA uptake, this limitation to protoplasts restricts the method's usefulness in monocots."

"A final method of gene transfer cited by Goodman is viral-mediated transformation. Goodman again reported only very limited success with this method in 1987."

Following on from this case, the US Court in *PGS v. DeKalb Genetics Corp.* (D23) found that the situation had not changed by March 11, 1987: monocot transformation was still not possible without extensive experimentation. This later case is of particular relevance as it is concerned, specifically, with the production of transgenic corn: it was brought by PGS who submitted that DeKalb's herbicide resistant transgenic corn plants infringed its patent. It is notable that DeKalb, part of the same company, Monsanto, that owns D6, argued in this case that the PGS patent was not enabled for the production of transgenic corn as it was not possible to transform corn in 1987!

Thus, in light of the sparse detail provided in D6 with respect to transformation in general, let alone monocot transformation, and given the evidence provided above that monocot transformation, and particularly corn

transformation, was not possible in 1987 (and, in fact, not for a further two years), it is clear that D6 is not enabled for the production of transgenic corn.

2. D6 is not enabled for the production of any glyphosate resistant plants, let alone glyphosate resistant corn plants.

Furthermore, D6 does not actually provide any glyphosate resistant plants. The Opposition Division is referred to Table 3 in D6 in column 14. In this table it can be seen that even the lowest application of glyphosate caused a decrease in leaf growth on the supposedly resistant plants and the higher application have an even more dramatic effect – the plants had stopped growing all together and performed no better than the control plants. The plants of D6 are therefore sensitive to glyphosate, not resistant. One explanation for this can be found in a further US patent (now also in the name of Monsanto), US 4,940,835 (enclosed as D24), where the following statement is found in column 3, lines 10 to 16:

"Indeed, prior to the present invention it was unknown whether the cloned EPSPS would be needed in the cytoplasm or chloroplasts in order to confer glyphosate resistance. Contrary to the teaching of US Pat. No. 4,535,060¹ it has now been found that the EPSPS gene should contain a chloroplast transit peptide."

It is evident from this statement that the disclosure of D6 lacks an essential feature required to produce glyphosate resistant plants: the inserted gene (in both cases, a 5-enolpyruvylshikimate-3-phosphate synthase ('EPSPS')) must be linked to a chloroplast transit peptide so that the protein product of the gene is transported to the chloroplast. In the absence of such a transit peptide, it is not possible to make glyphosate resistant plants.

In conclusion, it is clear that D6 is not enabled for the production of any glyphosate resistant plant, let alone a particularly recalcitrant monocot such as corn. Of course, if D6 does not enable the production of a glyphosate resistant monocot, it certainly does not enable use of a combination of glyphosate and metolachlor over a glyphosate resistant corn plant. Claim 1 must therefore be considered novel over the non-enabled disclosure of D6.

Furthermore, even if D6 is considered by the Board to be an enabling disclosure, it is submitted that it does not disclose the use of a combination of glyphosate and metolachlor to provide an increase in the selectivity for the control of weeds in maize. The question to be decided is what had been made available to the public, not what might have been inherent in what was made available to the public. Furthermore, when considering how far the teaching in a written description also made the inevitable result of carrying out such teaching available to the public, a line must be drawn between what is in fact made available and what remains hidden or otherwise has not been made available. D6 discusses glyphosate resistant crops and states that glyphosate and another herbicide e.g. metolachlor may be used on glyphosate resistant crops. Metolachlor was first marketed in 1976 and was known to be a selective herbicide useful in maize crops. Therefore, the only teaching that can be taken from D6 is that glyphosate and a known maize herbicide can be applied to glyphosate resistant maize. There is no teaching in D6 that glyphosate still causes crop damage even when applied to glyphosate resistant corn and that applying glyphosate in combination with metolachlor will reduce the crop damage whilst maintaining the herbicidal effect, i.e. the selectivity is increased. Therefore, the subject matter of claim 1 of the opposed patent is clearly novel over D6.

¹ The 1983 filing on which D6 is based

First Auxiliary Request

The claims of the first auxiliary request are essentially identical those of the main request, with the exception that the phrase "and wherein the composition provides an increase in the selectivity for said useful plant cultivations" has been deleted from claim 1.

Second Auxiliary Request

Claims 1 to 15 are essentially similar to claims 1 to 15 of the main request, with the exception that reference to metolachlor has been deleted from claims 1 to 6. Claims 1 to 15 are therefore novel.

A new independent claim (claim 16) and a dependent claim (claim 17) have been added which relate to the process of the invention wherein the crop is soya and the composition used contains glufosinate and/or glyphosate and metolachlor. There is no disclosure in D6 of combinations of glufosinate and/or glyphosate and metolachlor being used on glyphosate-resistant soya; the combinations disclosed in D6 for soya are glyphosate and bentazon or acifluorfen. These two new claims are therefore novel over D6.

Third Auxiliary Request

The claims of the third auxiliary request are essentially identical to those of the second auxiliary request, with the exception that the phrase "and wherein the composition provides an increase in the selectivity for said useful plant cultivations" has been deleted from claim 1.

In conclusion, we request that the patent is maintained in amended form on the basis of the claims attached to this letter, titled "Main Request".

Yours faithfully,



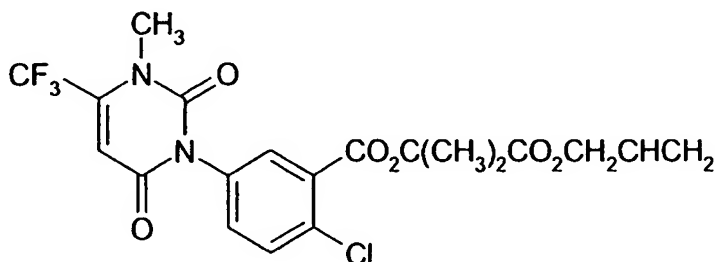
Jane E Swift
European Patent Attorney

Enc.: Appendix (with Main Request and three auxiliary requests)
D22 (In Re Goodman)
D23 (PGS v. DeKalb Genetics Corp.)
D24 (US 4,940,835)
Copy of letter, appendix, D22, D23 and D24 for Opponent (with confirmation copy)

APPENDIX

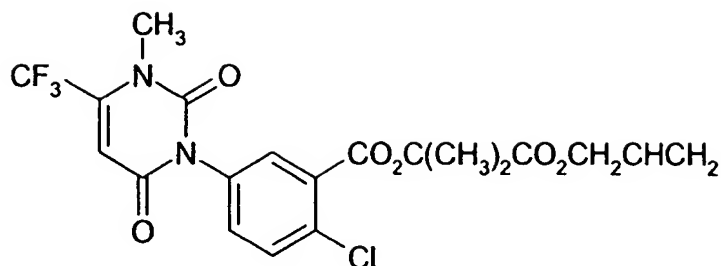
Main Request

1. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, metolachlor and its S-enantiomer, fluometuron, propaquizafop, atrazine, clodinafop, norflurazone, ametryn, terbuthylazine, simazine, prometryn, NOA-402989, as well as the compound of formula



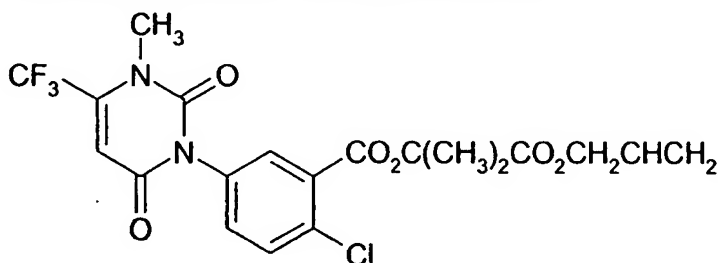
is allowed to take effect on the cultivated plant or its habitat, and wherein the composition provides an increase in the selectivity for said useful plant cultivations, with the provision that compositions containing glufosinate and metolachlor, glufosinate and atrazine, glufosinate and metolachlor and atrazine, as well as glufosinate and atrazine and dicamba are not used in glufosinate-resistant maize, and further that compositions containing glyphosate and atrazine are not used in glyphosate-resistant maize, and compositions containing glyphosate and metolachlor or glyphosate and dimethenamide are not used in glyphosate-resistant soya.

2. Process according to claim 1 for the control of weeds in cultivations of useful plants which are resistant to the herbicide glufosinate, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, metolachlor and its S-enantiomer, fluometuron, propaquizafop, atrazine, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula

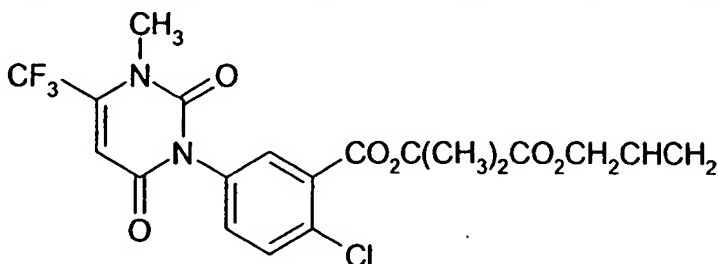


is allowed to take effect on the cultivated plant or its habitat.

3. Process according to claim 1, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, metolachlor and its S-enantiomer, atrazine, NOA-402989, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula



4. Process according to claim 3, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, metolachlor and its S-enantiomer, atrazine, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula



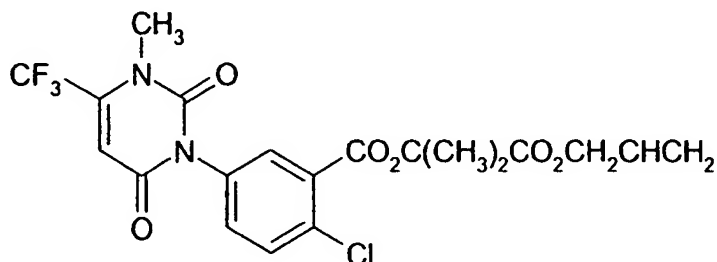
5. Process according to claim 1, characterised in that the useful plant being cultivated is soya which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor as well as its S-enantiomer.
6. Process according to claim 5, characterised in that the useful plant being cultivated is soya which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor as well as its S-enantiomer.
7. Process according to claim 1, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of fluometuron.
8. Process according to claim 7, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of fluometuron.
9. Process according to claim 1, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of propaquizafop.
10. Process according to claim 9, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of propaquizafop.
11. Process according to claim 1, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of ametryn.
12. Process according to claim 11, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of ametryn.
13. Process according to claim 1, characterised in that the useful plant cultivations are treated with the said composition at application rates corresponding to 0.3 to 4/0 kg total active ingredient per hectare.

14. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, norflurazone and NOA-402989.

15. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, and NOA-402989.

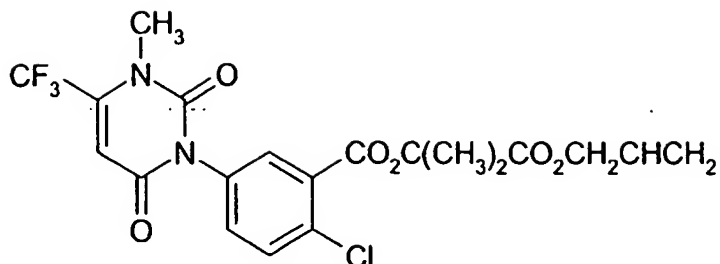
Second Auxiliary Request

1. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, the S-enantiomer of metolachlor, fluometuron, propaquizafop, atrazine, clodinafop, norflurazone, ametryn, terbuthylazine, simazine, prometryn, NOA-402989, as well as the compound of formula



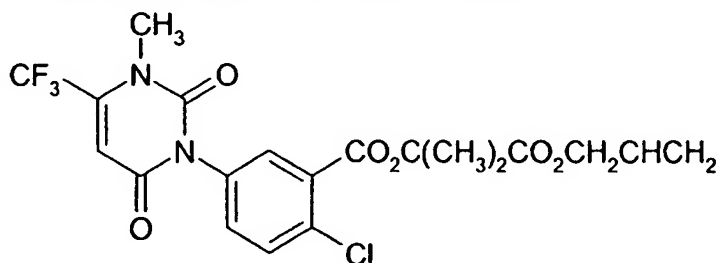
is allowed to take effect on the cultivated plant or its habitat, and wherein the composition provides an increase in the selectivity for said useful plant cultivations, with the provision that compositions containing glufosinate and metolachlor, glufosinate and atrazine, glufosinate and metolachlor and atrazine, as well as glufosinate and atrazine and dicamba are not used in glufosinate-resistant maize, and further that compositions containing glyphosate and atrazine are not used in glyphosate-resistant maize, and compositions containing glyphosate and metolachlor or glyphosate and dimethenamide are not used in glyphosate-resistant soya.

2. Process according to claim 1 for the control of weeds in cultivations of useful plants which are resistant to the herbicide glufosinate, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, the S-enantiomer of metolachlor, fluometuron, propaquizafop, atrazine, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula

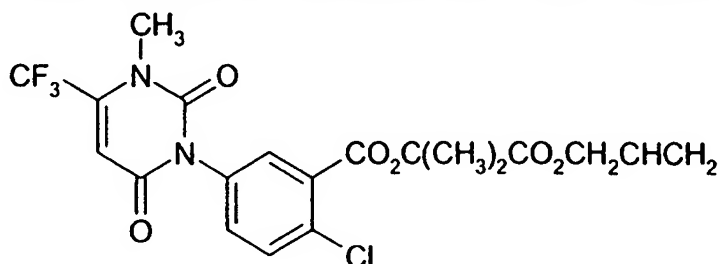


is allowed to take effect on the cultivated plant or its habitat.

3. Process according to claim 1, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, the S-enantiomer of metolachlor, atrazine, NOA-402989, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula



4. Process according to claim 3, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, the S-enantiomer of metolachlor, atrazine, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula

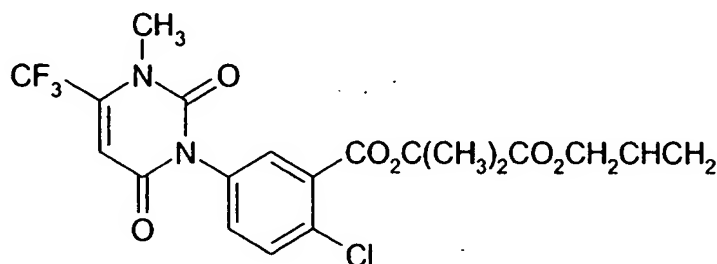


5. Process according to claim 1, characterised in that the useful plant being cultivated is soya which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide which is the S-enantiomer of metolachlor.
6. Process according to claim 5, characterised in that the useful plant being cultivated is soya which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide which is the S-enantiomer of metolachlor.
7. Process according to claim 1, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of fluometuron.
8. Process according to claim 7, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of fluometuron.
9. Process according to claim 1, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of propaquizafop.
10. Process according to claim 9, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of propaquizafop.
11. Process according to claim 1, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of ametryn.
12. Process according to claim 11, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of ametryn.
13. Process according to claim 1, characterised in that the useful plant cultivations are treated with the said composition at application rates corresponding to 0.3 to 4/0 kg total active ingredient per hectare.

14. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate; propaquizafop, clodinafop, norflurazone and NOA-402989.
15. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, and NOA-402989.
16. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor is allowed to take effect on the cultivated plant or its habitat, and wherein the composition provides an increase in the selectivity for said useful plant cultivations and wherein the useful plant being cultivated is soya which is resistant to glufosinate and/or glyphosate.
17. Process according to claim 16, characterised in that the composition contains glufosinate and a synergistic amount of a least one further herbicide selected from the group comprising metolachlor.

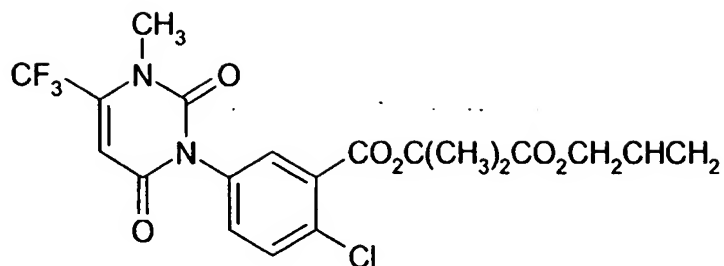
First Auxiliary Request

1. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, metolachlor and its S-enantiomer, fluometuron, propaquizafop, atrazine, clodinafop, norflurazone, ametryn, terbuthylazine, simazine, prometryn, NOA-402989, as well as the compound of formula



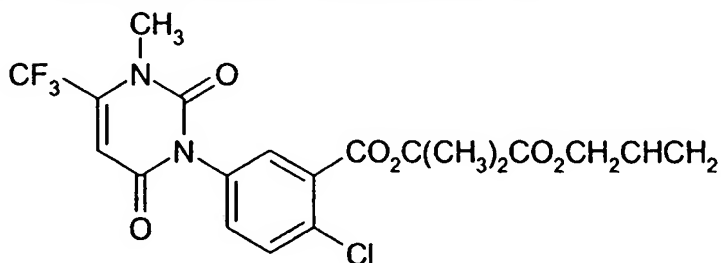
is allowed to take effect on the cultivated plant or its habitat, with the provision that compositions containing glufosinate and metolachlor, glufosinate and atrazine, glufosinate and metolachlor and atrazine, as well as glufosinate and atrazine and dicamba are not used in glufosinate-resistant maize, and further that compositions containing glyphosate and atrazine are not used in glyphosate-resistant maize, and compositions containing glyphosate and metolachlor or glyphosate and dimethenamide are not used in glyphosate-resistant soya.

2. Process according to claim 1 for the control of weeds in cultivations of useful plants which are resistant to the herbicide glufosinate, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, metolachlor and its S-enantiomer, fluometuron, propaquizafop, atrazine, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula

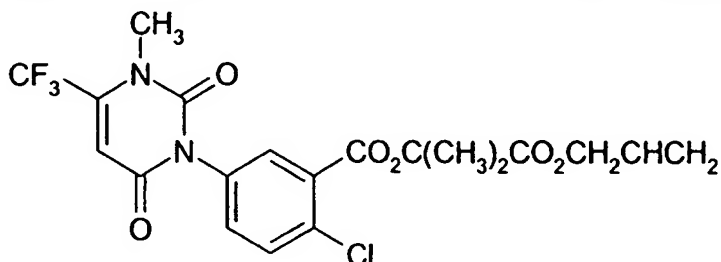


is allowed to take effect on the cultivated plant or its habitat.

3. Process according to claim 1, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, metolachlor and its S-enantiomer, atrazine, NOA-402989, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula



4. Process according to claim 3, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, metolachlor and its S-enantiomer, atrazine, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula



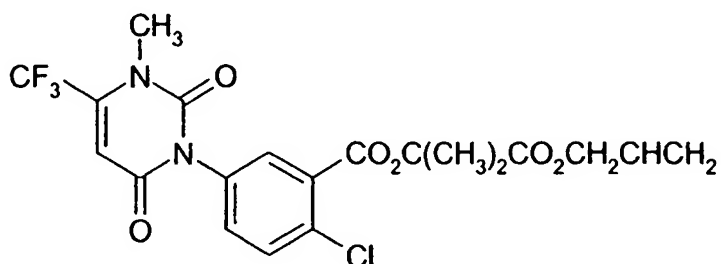
5. Process according to claim 1, characterised in that the useful plant being cultivated is soya which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor as well as its S-enantiomer.
6. Process according to claim 5, characterised in that the useful plant being cultivated is soya which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor as well as its S-enantiomer.
7. Process according to claim 1, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of fluometuron.
8. Process according to claim 7, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of fluometuron.
9. Process according to claim 1, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of propaquizafop.
10. Process according to claim 9, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of propaquizafop.
11. Process according to claim 1, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of ametryn.
12. Process according to claim 11, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of ametryn.
13. Process according to claim 1, characterised in that the useful plant cultivations are treated with the said composition at application rates corresponding to 0.3 to 4/0 kg total active ingredient per hectare.

14. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, norflurazone and NOA-402989.

15. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, and NOA-402989.

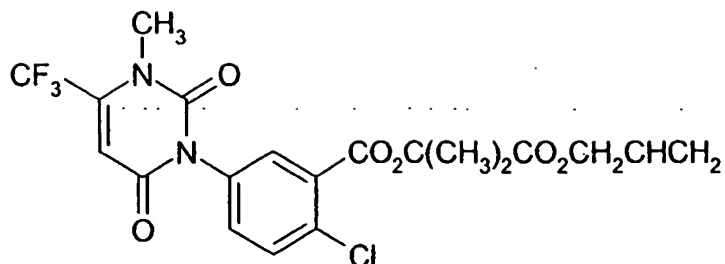
Third Auxiliary Request

1. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, the S-enantiomer of metolachlor, fluometuron, propaquizafop, atrazine, clodinafop, norflurazone, ametryn, terbuthylazine, simazine, prometryn, NOA-402989, as well as the compound of formula



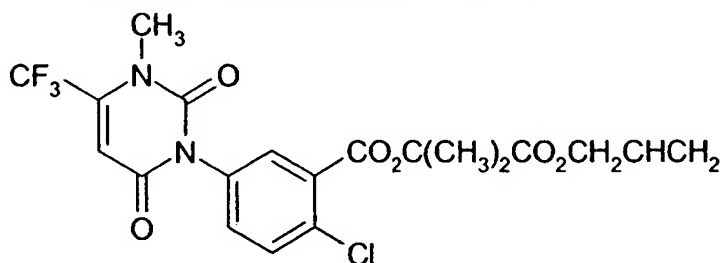
is allowed to take effect on the cultivated plant or its habitat, with the provision that compositions containing glufosinate and metolachlor, glufosinate and atrazine, glufosinate and metolachlor and atrazine, as well as glufosinate and atrazine and dicamba are not used in glufosinate-resistant maize, and further that compositions containing glyphosate and atrazine are not used in glyphosate-resistant maize, and compositions containing glyphosate and metolachlor or glyphosate and dimethenamide are not used in glyphosate-resistant soya.

2. Process according to claim 1 for the control of weeds in cultivations of useful plants which are resistant to the herbicide glufosinate, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, the S-enantiomer of metolachlor, fluometuron, propaquizafop, atrazine, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula

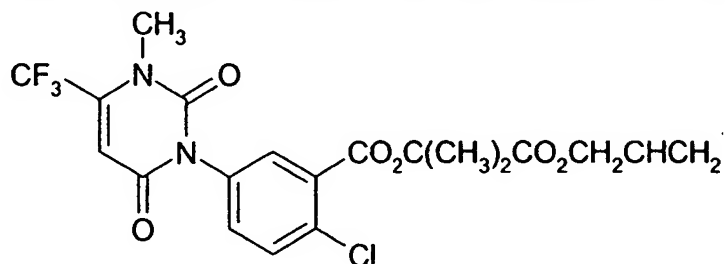


is allowed to take effect on the cultivated plant or its habitat.

3. Process according to claim 1, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide and its S-enantiomer, the S-enantiomer of metolachlor, atrazine, NOA-402989, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula



4. Process according to claim 3, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising dicamba, pyridate, dimethenamide, the S-enantiomer of metolachlor, atrazine, ametryn, terbutylazine, simazine, prometryn, as well as the compound of formula



5. Process according to claim 1, characterised in that the useful plant being cultivated is soya which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide which is the S-enantiomer of metolachlor.
6. Process according to claim 5, characterised in that the useful plant being cultivated is soya which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide which is the S-enantiomer of metolachlor.
7. Process according to claim 1, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of fluometuron.
8. Process according to claim 7, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of fluometuron.
9. Process according to claim 1, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of propaquizafop.
10. Process according to claim 9, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of propaquizafop.
11. Process according to claim 1, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of ametryn.
12. Process according to claim 11, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of ametryn.
13. Process according to claim 1, characterised in that the useful plant cultivations are treated with the said composition at application rates corresponding to 0.3 to 4/0 kg total active ingredient per hectare.

14. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, norflurazone and NOA-402989.
15. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, propaquizafop, clodinafop, and NOA-402989.
16. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor is allowed to take effect on the cultivated plant or its habitat, and wherein the composition provides an increase in the selectivity for said useful plant cultivations and wherein the useful plant being cultivated is soya which is resistant to glufosinate and/or glyphosate.
17. Process according to claim 16, characterised in that the composition contains glufosinate and a synergistic amount of a least one further herbicide selected from the group comprising metolachlor.



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D-67056 Ludwigshafen
ALLEMAGNE



Datum/Date

14.05.05

Zeichen/Ref./Réf.

GVX/P-C6 HEISTR OPPO 01

Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°.

97940156.9-2117/0930823

Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire

Syngenta Participations AG

SUMMONS TO ATTEND ORAL PROCEEDINGS PURSUANT TO RULE 71(1) EPC

You are hereby summoned to attend oral proceedings arranged in connection with the above-mentioned European patent.
The matters to be discussed are set out in the communication accompanying this summons (EPO Form 2906).

The oral proceedings, which will be public, will take place before the opposition division

* on 24.11.05 at 09h 00 hrs in Room 1664 at the EPO Grasserstr. 2 *
* PschorrHöfe, D-80335 München *

No changes to the date of the oral proceedings can be made, except on serious grounds (see OJ 10/2000, p. 456).

If you do not appear as summoned, the oral proceedings may continue without you (Rule 71(2) EPC).

Your attention is drawn to Rule 2 EPC, regarding the language of the oral proceedings, and to the Official Journal 9/91, p. 489, concerning the filing of authorisations for company employees and lawyers acting as representatives before the EPO.

The final date for making written submissions and/or amendments (Rule 71a EPC) is 24.10.05

You are requested to report in good time beforehand to the porter in the EPO foyer. Room 1601 and 1657 are available as waiting rooms.
Parking is available free of charge in the underground car park.
However, this applies only in the case of accessing the car park via the entrance "Zollstrasse".

Annexes:

For the opposition division:

Tel. No.: José Ruiz
Tel. (089) 2399-7960

Confirmation of receipt (Form 2936)
Rule 2 EPC (EPO Form 2043)
Communication (EPO Form 2906)

Registered letter with advice of delivery

EPO Form 2310.1PH6 09.01

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I. Facts and Submissions

- I.1. The present disputed patent n° EP 0 930 823 has been granted on EP 97940156.9, which derives from PCT/EP97/04795 filed on 03/09/1997, and claims the priority date of 05/09/1996 (cf. CH 220296).

The proprietor is Syngenta Participations AG.

The grant of the patent has been published and mentioned on 18/12/2002.

The title of the patent is "Process for the control of weeds".

- I.2. An opposition has been filed on 18/09/2003 by BASF AG, which is based on Article 100(a) EPC; the opponent asked for the total revocation of the patent as the subject-matter therein disclosed would not be patentable within the terms of Article 52 EPC. In case the opposition division were of the opinion that said request could not be accepted, the opponent requested Oral Proceedings.

- I.3. In his letter of 18/09/2003 the opponent cited the following documents:

D1: WO 96/25034

D2: Research Disclosure, April 1995, 271, 37242

D3: EP 820 227 (= WO 96/32013)

D4: EP 876 100 (= WO 97/24930)

D5: EP 888 055 (= WO 97/34484)

D6: US 5,094,945

D7: J. M. Lich et al., Weed Science 45(1), 12-21 (1997)

D8: L. Gonzini et al., Res. Rep. North Cent. Weed Sci. Soc. 52, 266-267 (1995)

D9: WO 92/08353

D10: EP 614 606

D11: Research Disclosure, March 1987, 275, 27546

D12: P. Homus, Oleagineux 45(2), 57-68 (1990)

D13: DE 28 39 087

D14: EP 499 798

D15: P. Langelüddeke et al., British Crop Prot. Conf. Weeds, 1985, Vol. 3, S. 1047-1052

D16: P. Westra et al., Weed Technology 6(4), 949-955 (1992)



D17: EP 378 985

D18: S. M. Brown et al., *Weed Science* 33(6), 843-847 (1985)

D19: EP 441 764

D20: S. Tan et al. *J. Environ. Qual.* 24, 970-972 (1995)

D21: EP 357 553

The opponent argued that the priority of 05/09/1996 would only be partially valid, namely for claims 2, 4, 6, 8, 10 and 12.

As regards novelty, the opponent held that claims 1-6 and 13-15 of the present disputed patent would not be new in the sense of Article 54(2) and (3) EPC and, for claim 1 in particular, the following passages of the prior art documents were cited:

D1 pages 3-5; D2 2nd line of the 3rd paragraph, and paragraph 17; D on pages 1-2 and 11; D pages 3-4; D pages 10 and 16-17; D6 column 7, lines 17-32; D7 on page 14, 2nd paragraph; D8 on page 267.

Furthermore, the subject-matter of dependent claims 2-6 was objected to in view of the teaching of documents D1 to D8.

Claims 14-15, disclosing herbicidal compositions, were deemed not to meet the requirements of Article 54 EPC in view of the following passages:

D1 page 5, 1st paragraph; D3 page 11, fifth paragraph, line 2; D4 page 4, forth paragraph; D5 on pages 16-17, last paragraph; D9 page 5, 2nd paragraph; D10 pages 2 and 7; D11 4th paragraph; D12 page 12, table 2; D13 pages 7-8, DII-DV; D14 page 3, line 20 and tables 1-3; D15 page 1050, 3rd paragraph.

For claim 15, documents D6-D8 and D16-D21 were also cited.

The opponent further argued that the subject-matter of the present patent is not inventive in the sense of Article 56 EPC.

On page 3, paragraph 5 of the patent specification it is stated that the combination of a phospho-herbicide such as glufosinate or glyphosate with another herbicide (cf. list of claim 1) would lead to a synergistic effect in the control of weeds in useful plant cultivations. However, the data sent with letter of 08/06/2001 during the examination procedure would not show any synergistic effects in the opponent's view.

Moreover, the opponent pointed at the documents cited in the patent specification on page 5, paragraph 22, which would also lead to the subject-matter of present claims.



As regards inventive step, the opponent further cited the teaching of D1-D8 and contested the inventiveness of dependent claims 2-5 and 7-15.

- I.4 The patent proprietor replied with letter dated 28/04/04 and requested that the patent be maintained in an amended form, namely on newly filed claims 1-15.

In case the opposition division were not willing to accept the above-mentioned request, the proprietor asked for Oral Proceedings under Article 116 EPC.

In said new claims, the proprietor deleted any references to formula I in claims 1-6 and to formula III in claims 1, 2, 5 and 6; references to other substances have been deleted from claims 14 and 15.

In addition, the phrase "and wherein the composition provides an increase in the selectivity for said useful plant cultivations" has been inserted in new claim 1.

The proprietor underlined all the differences between the disputed patent and the documents cited by the opponent, and concluded that present claims on file are new over the prior art, in particular because of the above-mentioned amendments and of the feature "and wherein the composition provides an increase in the selectivity for said useful plant cultivations", which has been inserted in new claim 1.

As regards the herbicidal compositions of claims 14 and 15, they have been amended in order to exclude those compositions already disclosed in the prior art.

The proprietor further stated that the problem to be solved by the present application may be seen in the provision of a process with a high level of weed control with an increase in selectivity for useful plant cultivations.

The solution to this problem, namely the various combinations of glyphosate or glufosinate with a co-herbicide, would be inventive as data have been shown in which the weed control of the compositions used in the patent is comparable with or better than the control of the two components when used separately.

Said data would also show that the damage suffered by the useful crops is reduced when the compositions of the patent are used, in comparison with the damage caused when the glyphosate/glufosinate is used alone.

- I.5 In view of the opponent's and the proprietor's requests, Oral Proceedings are scheduled.



II. Provisional opinion as to the grounds of opposition

II.1 As a **provisional opinion**, which does not have any binding character as regards the decision to be taken on the present disputed patent, the opposition division would like to draw the opponent's and the proprietor's attention to the following comments, which may also constitute an overview of the major points to be discussed at Oral Proceedings.

II.2 Amendments

The amendments filed with letter dated 28/04/2004 do not seem to introduce any subject-matter extending beyond the original disclosure nor extend the protection conferred, and would thus comply with the requirements of Article 123(2) and (3) EPC. The proprietor deleted any references to formula I in claims 1-6 and to formula III in claims 1, 2, 5 and 6; references to other herbicides have been deleted from claims 14 and 15. In addition, the phrase "and wherein the composition provides an increase in the selectivity for said useful plant cultivations" has been inserted in new claim 1, which is supported by page 3 of the B1 specification, lines 47-48.

II.3 In claim 1 the wording "and wherein the composition provides an increase in the selectivity for said useful plant cultivations" was introduced.

Thus, claim 1 and dependent upon attempt to define the subject-matter in terms of a result to be achieved. Such a definition does not appear to meet the conditions elaborated in the Guidelines C-III, 4.7.

II.4 Novelty

Claims 6-7 of D1 disclose a method of controlling undesired plant growth in crops in useful plants, such as maize or soybeans, which comprises contacting a herbicidal composition containing oxasulfuron, prosulfuron or primisulfuron **and** glufosinate or glyphosate on the cultivated plant.

As maize and soya have been indicated in the patent specification on page 3,



paragraphs [0007] and [0008], as being resistant to phospho-herbicides, the teaching of D1 seems to fall within the subject-matter of present claims 1-4 (cf. also D1 on page 4, 2nd paragraph).

The 3rd paragraph on page 5 of D1 seems to anticipate the novelty of present claim 13 (cf. also claim 8 of D1).

In this respect, it should be noticed that the phrase "and wherein the composition provides an increase in the selectivity for said useful plant cultivations" does not constitute any **technical feature**, which may distinguish present claims from the prior art, but it merely seems a "result to be achieved". Thus, this sentence has not been taken into consideration for acknowledging novelty.

D6 discloses on column 7, lines 17-32 and lines 35-39, formulations to be used in glyphosate-resistant plants for protecting crops from weeds, which include glyphosate in combination with atrazine or metolachlor.

The teaching of D6 seems to overlap with the subject-matter of present claims 1,3, 5 and 13.

D8 describes the use of mixtures of glyphosate and dimetheneamide in glyphosate resistant soybeans (cf. 1st paragraph and table), which anticipates the subject-matter of present claim 1.

D11 (cf. 4th paragraph) discloses a composition comprising glufosinate and fluometuron, which appears to overlap with the subject-matter of claim 14.

The herbicidal compositions of D4 (cf. pages 2-4), D7 (cf. page 14, 2nd paragraph, and page 18, table 4) and D18 (table 1, line 4) appear to overlap with the composition disclosed in new claim 15.

II.5 Inventive step

As both the opponent and the proprietor underlined, different mixtures of glufosinate or glyphosate with co-herbicides are known from the state of the art, for instance from D1, D6 and D8.

**Bescheid/Protokoll (Anlage)**

Datum
Date
Date

14.06.2005

Communication/Minutes (Annex)

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Notification/Procès-verbal (Annexe)

Anmelde-Nr.:
Application No.:
Demande n°:

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Accordingly, the problem to be solved by the present patent may be regarded as the provision of improved compositions in the control of weeds in useful plant cultivations, which are resistant to phospho-herbicides.

The data filed by the proprietor with letter dated 08/06/2001 may be taken into consideration for evaluating the inventiveness of present patent claims, as they show that when said herbicides are applied in combination, the herbicidal activity is maintained or improved, **and** the damage caused to the crops is considerably reduced if compared with the damage caused by the application of glufosinate or glyphosate alone.

The increase in selectivity does not seem to have been suggested by the state of the art.

The inventiveness of present claims will thus be judged in the light of said data.

syngenta

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29. April 2004

28 April 2004

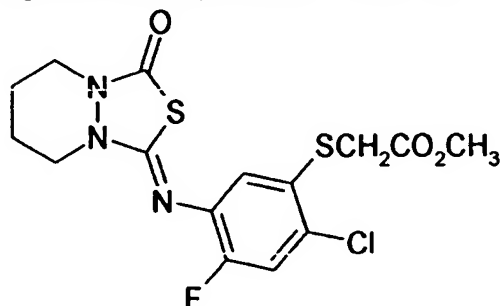
European Patent Application No.97940156.9-2110/0930823

Our Ref: PH/5-21028 /EP

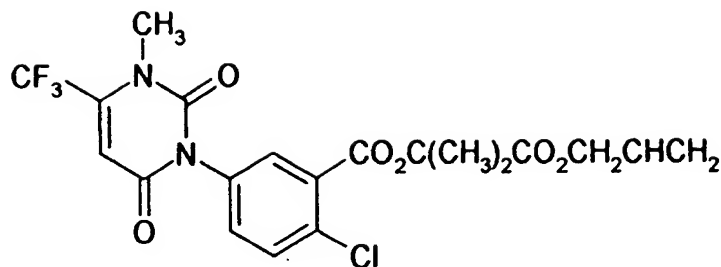
Dear Sirs,

This is in response to the Communication of notices of Opposition (R.57(1) EPC) dated 24th October 2003, and for which an extension of two months for filing the reply was granted in a communication dated 3rd March 2004.

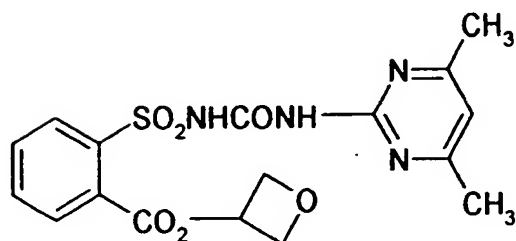
An amended set of claims is enclosed as Appendix 1, which we believe are novel and inventive. Reference to compound of the following formula I is deleted from claims 1, 2, 3, 4, 5 and 6; reference to compound of the following formula III is deleted from claims 1, 2, 5 and 6; reference to prosulfuron, primisulfuron, dimethenamide and its S-enantiomer, the S-enantiomer of metolachlor, ametryn, terbutylazine, simazine, prometryn and the compounds of formulae I and II have been deleted from claim 14; and reference to prosulfuron, primisulfuron, dicamba, the S-enantiomer of dimethenamide, the S-enantiomer of metolachlor, ametryn, prometryn and the compounds of formulae I and II have been deleted from claim 15. In addition, the phrase "and wherein the composition provides an increase in the selectivity for said useful plant cultivations," has been inserted into claim 1, basis for which is found on page 3 of the B1 specification, lines 47-48.



(I)
Fluthiacet-methyl



(II)
Butafenacil



(III)
Oxasulfuron

The present invention relates to a process for providing a high level of weed control with an increase in selectivity for useful plant cultivations. The increase in selectivity can be shown by a safening effect on the useful plants. The data provided during prosecution of the opposed application shows that the weed control of the compositions used in the invention is comparable with or better than the control of the two components when used separately. Furthermore, the data clearly shows that the damage sustained by the useful crops is reduced when the compositions of the invention are applied when compared to the damage sustained when the glyphosate/glufosinate is used alone. Accordingly, comparable or better weed control and a reduction in the damage sustained by the useful plants provide an increase in the selectivity.

The patent in suit was opposed by BASF on the grounds of lack of novelty and inventive step.

1. Novelty

1.1 Claim 1

- 1.1.1 D1 discloses process for control of weeds in herbicide-resistant plants, wherein mixtures of glufosinate or glyphosate with prosulfuron, primisulfuron or oxasulfuron are used. No disclosure of an increase in selectivity is given for the herbicidal combinations as required by amended claim 1. Reference to oxasulfuron has been deleted from claim 1.
- 1.1.2 D2 discloses mixtures of glyphosate with metolachlor in paragraphs 3 and 8. Paragraph 17 referred to by the opponent needs to be read in combination with paragraphs 18 and 19 (they are not separate paragraphs in the normal sense of the word) and the mixtures useful in herbicide resistant crops are listed in paragraph 18 and 19 and does not include glyphosate and metolachlor. Furthermore, the resistant crops are resistant to sulphonylurea type herbicides ("...die gegen Herbizide vom Sulfonylhamstofftyp resistent ist, ..."), or are resistant to imidazolinone type herbicides ("... der gegen Herbizide vom Imidazolinontyp resistent ist, ..."). There is no disclosure of glyphosate/metolachlor mixtures being used in crops that are resistant to a phosphoherbicide. Furthermore, there is no disclosure of an increase in selectivity being provided by the glyphosate/metolachlor mixture.
- 1.1.3 D3 discloses mixtures of S-metolachlor with glyphosate or glufosinate and their use in controlling weeds in crops of useful plants. Page 11, paragraph 2 of D3 indicates that the crops may be

tolerant to herbicides. However, there is no specific disclosure that the crops may be tolerant to a phospho-herbicide as required by claim 1. Furthermore, no evidence is provided in D3 that demonstrates that the mixtures provide a safening effect, thereby increasing the selectivity as required by amended claim 1.

- 1.1.4 D4 discloses a herbicidal combination of fluthiacet-methyl with glyphosate and/or glufosinate and its use to control weeds in crops including herbicide tolerant crops. Reference to fluthiacet-methyl has been deleted from claim 1.
- 1.1.5 D5 discloses combinations of butafenacil with *inter alia* glyphosate or glufosinate and their use in controlling weeds in crops of useful plants. Page 10 indicates that the crops include those that are herbicide tolerant. However, there is no specific disclosure that the crops may be tolerant to a phospho herbicide as required by claim 1. Furthermore, no evidence is provided in D5 that demonstrates that the combinations provide a safening effect, thereby increasing the selectivity as required by amended claim 1.
- 1.1.6 D6 discloses that the glyphosate-resistant enzyme may be introduced into a wide variety of plants and that a variety of formulations, including combinations of glyphosate with another herbicide, can be employed for protecting crops from weeds. The other herbicide includes acetanilide herbicides such as alachlor or metolachlor, atrazine, cyanazine, dicamba, bromoxynil, bentazon or agran for use in corn; bentazon and aciflurofen for use in soybean, tobacco and cotton; and aciflurofen for used in tomatoes. There is no disclosure or suggestion that such combinations would also provide a safening effect for the crop while continuing to provide excellent weed control, thereby increasing the selectivity.
- 1.1.7 D7 provides data for weed control of mixtures of glyphosate with fluthiacet-methyl in glyphosate-resistant soybean. Reference to fluthiacet-methyl has been deleted from claim 1.
- 1.1.8 D8 provides data for weed control of mixtures of glyphosate with dimethenamide and oxasulfuron in glyphosate-resistant soybean. There is no disclosure or suggestion that the combinations actually provide a safening effect on the crop, thereby increasing the selectivity.

Claim 1 is therefore novel over the documents cited by the Opponent since none of the documents disclose all the features required by claim 1 as amended.

- 1.2. Claims 2 to 6 and 13
Claims 2 to 6 and 13 are dependent on Claim 1. We have clearly shown that claim 1 is novel over the documents D1 to D8 cited by the Opponents; accordingly, dependent claims 2 to 6 and 13 are also novel over the documents D1 to D8.
- 1.3 Claim 14
Claim 14 has been amended to exclude those compositions disclosed in D1, D3 to D5, D9, D10 and D12 to D15. D11 does not disclose a formulated composition as stated by the opponent, but merely refers to a tank mix of glufosinate with fluometuron or norflurazone. Claim 14 as amended is therefore novel over the documents cited by the Opponent.
- 1.4 Claim 15
Claim 15 has been amended to exclude those composition disclosed in D1, D3 to D5, D9, D10, D16, D17 and D19 to D21. D6, D7, D8, D12 and D18 do not disclose herbicidal compositions as indicated by the Opponent, but all clearly refer to tank mixes of the various components. Claim 15 as amended is therefore novel over the documents cited by the Opponent.

Claims 1 to 6 and 13 to 15 are therefore novel over the documents cited by the Opponent.

2 Inventive Step

The problem to be solved by the present invention is to provide good weed control in crops of phospho-herbicide resistant useful plants, whilst minimising the damage caused to the useful crops, i.e. increasing the selectivity of the herbicide. The solution is provided by the various combinations of glyphosate or glufosinate with a co-herbicide as claimed in the opposed patent (amended claims). The fact that good weed control, comparable or better than seen by the individual components, in combination with a safening effect is demonstrated by the data submitted during prosecution is a completely surprising effect.

2.1 Claim 1

2.1.1 Although a few combinations for use on glufosinate or glyphosate tolerant crops have previously been disclosed as identified in the opposed patent, the proprietor asserts that it is not obvious that these mixtures could be used on other tolerant crops and provide the solution of the present invention. As shown by the data provided during prosecution, even tolerant crops do experience a degree of damage when treated with the herbicide to which they are tolerant. The data presented by the proprietor demonstrates that when herbicides are applied in combination, the herbicidal activity is maintained, but the damage caused to the crop is reduced when compared to the damage caused by the application of glyphosate or glufosinate alone. Thus the selectivity has been increased. This is a very surprising result and one which could not have been predicted from the papers referenced in the opposed patent. Furthermore, it would not be obvious to use other known compositions containing glyphosate or glufosinate and a further herbicide and expect a similar increase in the selectivity. Accordingly, claim 1 demonstrates an inventive step over the prior art.

2.1.2 D1 discloses process for control of weeds in herbicide-resistant plants, wherein mixtures of glufosinate or glyphosate with prosulfuron, primisulfuron or oxasulfuron are used. There is no indication in this disclosure that tolerant crops experience any form of damage when treated with the herbicide to which they are tolerant, and equally no disclosure that indicates or suggests that applying a combination of herbicides will actually reduce the damage caused i.e. increase the selectivity. Accordingly, claim 1 demonstrates an inventive step over D1.

2.1.3 As indicated in 1.1.2 above, D2 does not disclose combinations of glyphosate and metolachlor for use on glyphosate-resistant crops. Furthermore, there is nothing in D2 that would indicate or suggest to the skilled person that the combination of herbicides would reduce the crop damage caused when glyphosate is applied alone thereby increasing the selectivity. Accordingly, claim 1 demonstrates an inventive step over D2.

2.1.4 Similarly, none of D3 to D8 indicates that tolerant crops experience damage when treated with the herbicide to which they are tolerant, or that applying a combination of herbicides will reduce that damage, i.e. increase the selectivity. Accordingly, claim 1 demonstrates an inventive step over D3 to D8.

The data provided during prosecution therefore clearly demonstrates that claim 1 is inventive over the prior art.

2.2 Claim 2

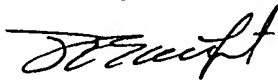
Claim 2 is dependent on claim 1. We have clearly shown that claim 1 is inventive over the prior art; accordingly dependent claim 2 is also inventive over the prior art.

- 2.3 Claims 3, 5, 7, 9 and 11
Claims 3, 5, 7, 9 and 11 are all dependent on claim 1. We have clearly shown that claim 1 is inventive over the prior art; accordingly, dependent claims 3, 5, 7, 9 and 11 are also inventive over the prior art.
- 2.4 Claims 4, 8, 10 and 12
Claims 4, 8, 10 and 12 are dependent on claims 3, 7, 9 and 11 respectively. We have clearly shown that claims 3, 7, 9 and 11 are inventive over the prior art; accordingly dependent claims 4, 8, 10 and 12 are inventive over the prior art.
- 2.5 Claim 13
Claim 13 is dependent on claim 1. We have clearly shown that claim 1 is inventive over the prior art; accordingly, dependent claim 13 is inventive over the prior art.
- 2.6 Claims 14 and 15
It is agreed that a number of herbicidal mixtures of glyphosate or glufosinate with a second herbicide are known. However, all those claimed in claims 14 and 15 are not known as demonstrated in 1.3 and 1.4 above. Whilst combining two herbicides may not in itself provide an inventive step, it is submitted that an inventive step should be acknowledged if some unexpected technical effect is achieved. In the present case the increase in selectivity obtained from the composition is completely unexpected and could not have been predicted from any of the prior art documents. Accordingly, it is submitted that claims 14 and 15 both demonstrate an inventive step.

Claims 1 to 5 and 7 to 15 therefore provide an inventive step over the documents cited by the Opponent.

The proprietor therefore submits that the amended claims enclosed herewith are both novel and inventive and meet the requirements of the European Patent Convention. It is therefore requested that the patent is maintained in amended form. If the request should not be granted in written proceedings, we request oral proceedings under Article 116 EPC.

Yours faithfully,



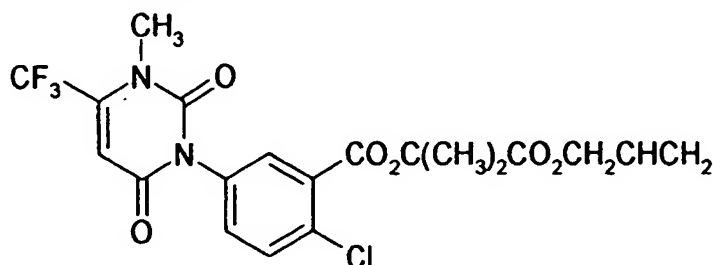
Jane E Swift
Authorisation No. 31434

Enc. Amended claims 1 to 15

Appendix 1

Amended claims

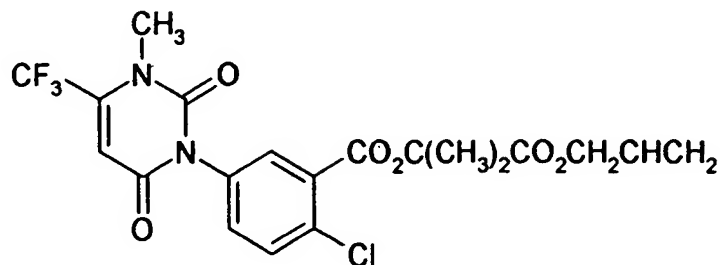
1. Process for the control of weeds in cultivation of useful plants which are resistant to a phospho-herbicide, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, a phospho-herbicide selected from the group comprising glufosinate and glyphosate, a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide and its S-enantiomer, metolachlor and its S-enantiomer, fluometuron, propaquizafop, atrazine, clodinafop, norflurazone, ametryn, terbuthylazine, simazine, prometryn, NOA-402989, as well as the compound of formula



is allowed to take effect on the cultivated plant or its habitat, and wherein the composition provides an increase in the selectivity for said useful plant cultivations, with the provision that compositions containing glufosinate and metolachlor, glufosinate and atrazine, glufosinate and metolachlor and atrazine, as well as glufosinate and atrazine and dicamba are not used in glufosinate-resistant maize, and further that compositions containing glyphosate and atrazine are not used in glyphosate-resistant maize, and compositions containing glyphosate and metolachlor or glyphosate and dimethenamide are not used in glyphosate-resistant soya.

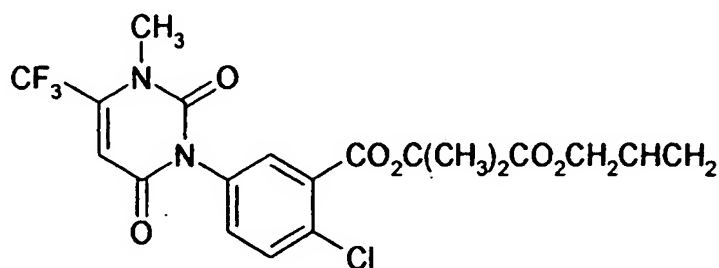
2. Process according to claim 1 for the control of weeds in cultivations of useful plants which are resistant to the herbicide glufosinate, characterised in that a herbicidally effective amount of a composition containing, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide, metolachlor and its S-enantiomer, fluometuron,

propaquizafop, atrazine, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula

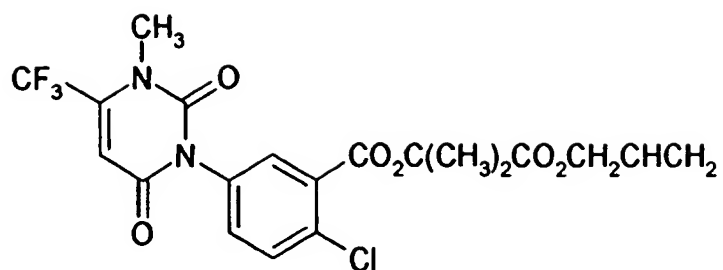


is allowed to take effect on the cultivated plant or its habitat.

3. Process according to claim 1, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide and its S-enantiomer, metolachlor and its S-enantiomer, atrazine, NOA-402989, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula

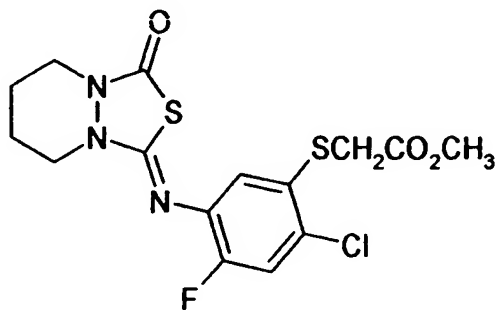


4. Process according to claim 3, characterised in that the useful plant being cultivated is maize which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising prosulfuron, primisulfuron, dicamba, pyridate, dimethenamide, metolachlor and its S-enantiomer, atrazine, ametryn, terbuthylazine, simazine, prometryn, as well as the compound of formula



5. Process according to claim 1, characterised in that the useful plant being cultivated is soya which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor as well as its S-enantiomer.
6. Process according to claim 5, characterised in that the useful plant being cultivated is soya which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising metolachlor as well as its S-enantiomer.
7. Process according to claim 1, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of fluometuron.
8. Process according to claim 7, characterised in that the useful plant being cultivated is cotton which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of fluometuron.
9. Process according to claim 1, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of propaquizafop.

10. Process according to claim 9, characterised in that the useful plant being cultivated is rape or beet which are resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of propaquizafop.
11. Process according to claim 1, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate and/or glyphosate, and the composition contains glufosinate or glyphosate and a synergistic amount of ametryn.
12. Process according to claim 11, characterised in that the useful plant being cultivated is sugar cane which is resistant to glufosinate, and the composition contains glufosinate and a synergistic amount of ametryn.
13. Process according to claim 1, characterised in that the useful plant cultivations are treated with the said composition at application rates corresponding to 0.3 to 4/0 kg total active ingredient per hectare.
14. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glufosinate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, fluometuron, propaquizafop, clodinafop, norflurazone and NOA-402989.
15. Herbicidal composition, characterised in that it contains, in addition to the usual inert formulation assistants, glyphosate and a synergistic amount of at least one further herbicide selected from the group comprising pyridate, fluometuron, propaquizafop, clodinafop, and NOA-402989 and





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Datum/Date
25-09-2003

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Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°.

97940156.9-2117/0930823

Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire

Syngenta Participations AG

COMMUNICATION OF A NOTICE OF OPPOSITION

Enclosed herewith is a copy of a notice of opposition to the European patent specified above.

An invitation to file observations and to file amendments, where appropriate, to the description, claims and drawings (Rule 57(1) EPC) will be issued separately.

The period within which such observations may be filed will not be fixed until the following conditions are met:

- (a) the opposition period has expired;
- (b) the notice of opposition has been examined for certain formal requirements (Rule 56 EPC).

Neubauer, Margit

Formalities Officer
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Enclosure: Notice of opposition

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22 Sep. 2003

Europäisches Patent 930 823 – Anm. Nr. 97940156.9

“Verfahren zur Bekämpfung von Unkräutern“

Patentinhaber: Syngenta Participations AG

Hinweis auf Erteilung vom 18.12.2002

Gegen das im Betreff genannte Patent wird hiermit durch die Firma BASF Aktiengesellschaft

Einspruch

gemäß Art. 99 EPÜ erhoben. Es wird beantragt das Patent in vollem Umfang zu widerrufen.

Der Einspruch wird auf die Einspruchsgründe gemäß Art. 100a) gestützt, da der Erfindungsgegenstand nach Artikel 52 EPÜ nicht patentfähig ist.

Sollte diesem Antrag nicht bereits auf schriftlichem Wege stattgegeben werden, beantragen wir gemäß Art. 116 EPÜ eine mündliche Verhandlung.

Wir bitten, die Einspruchsgebühr von 610.- Euro von dem laufenden Konto Nr. 2800.0009 der BASF Aktiengesellschaft abzubuchen.

Zur Kasse

Die beiliegende Kopie dieser Seite ist für das Referat Kassen- und Rechnungswesen bestimmt.

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Entgegengehaltene Literatur:

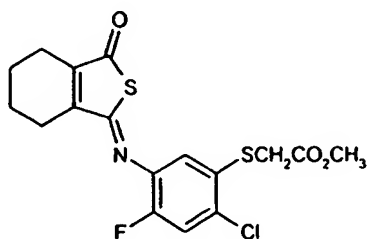
- D1 WO 96/25034
- D2 Research Disclosure, April 1995, 271, 37242
- D3 EP 820 227 (= WO 96/32013)
- D4 EP 876 100 (= WO 97/24930)
- D5 EP 888 055 (= WO 97/34484)
- D6 US 5,094,945
- D7 J. M. Lich et al, Weed Science 45 (1), 12 – 21 (1997)
- D8 L. Gonzini et al., Res. Rep. North Cent. Weed Sci. Soc. 52, 266-267 (1995)
- D9 WO 92/08353
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- D11 Research Disclosure, March 1987, 275, 27546
- D12 P. Hornus, Oleagineux 45 (2), 57-68 (1990)
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- D15 P. Langelüddeke et al., British Crop Prot. Conf. Weeds, 1985, Vol 3, S. 1047-1052
- D16 P. Westra et al., Weed Technology 6 (4), 949 - 955 (1992)
- D17 EP 378 985
- D18 S. M. Brown et al., Weed Science 33(6), 843-847 (1985)
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- D20 S. Tan et al., J. Environ. Qual. 24, 970-972 (1995)
- D21 EP 357 553

Gegenstand des strittigen Patents:

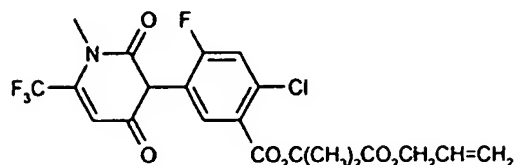
Anspruch 1 des in Rede stehenden Patents betrifft ein Verfahren zur Bekämpfung von Unkraut in Kulturen von Nutzpflanzen, wobei

- a) die Nutzpflanzen gegen ein Phospho-Herbizid resistent sind, und
- b) eine herbizid wirksame Menge einer Zusammensetzung, die, zusätzlich zu den üblichen inerten Formulierungshilfsstoffen,
 - b1) ein Phospho-Herbizid ausgewählt aus der Gruppe umfassend Glufosinat und Glyphosat, und
 - b2) eine synergistisch wirksame Menge von mindestens einem weiteren Herbizid ausgewählt aus der Gruppe umfassend Prosulfuron, Primisulfuron, Dicamba, Pyridat, Dimethenamid sowie dessen S-Enantiomer, Metolachlor sowie dessen S-Enantiomer, Fluometuron, Pro-

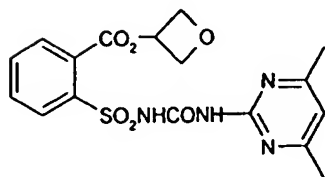
paquizafof, Atrazin, Clodinafof, Norflurazon, Ametryn, Terbutylazin, Simazin, Prometryn, NOA-402989, Fluthiacet-methyl ¹, Butafenacil ² und Oxasulfuron ³,



1 = Fluthiacet-methyl



2 = Butafenacil



3 = Oxasulfuron

enthält,
auf die Kulturpflanze oder ihren Standort einwirkt.

Ausgenommen werden entsprechende Verfahren in

- Glufosinat-resistenten Mais,
die Zusammensetzungen von - Glufosinat und Metolachlor,
- Glufosinat und Atrazin,
- Glufosinat und Metolachlor und Atrazin, und
- Glufosinat und Atrazin und Dicamba; sowie
- Glyphosat-resistenten Mais,
die Zusammensetzungen von - Glyphosat und Atrazin, sowie
- Glyphosat-resistenter Soja,
die Zusammensetzungen von - Glyphosat und Metolachlor, und
- Glyphosat und Dimethenamid,

betreffen.

Diejenigen Verfahren gemäß Anspruch 1, die Zusammensetzungen betreffen, welche Glyphosat als Komponente b1) enthalten, sind nicht durch die Priorität vom 05.09.1996 gestützt. Dies gilt ebenfalls

für Verfahren, die Zusammensetzungen betreffen, welche als Komponente b1) Glufosinat und als Komponente b2) S-Dimethenamid, Clodinafop, Norflurazon bzw. NOA-402989 enthalten.

Die Ansprüche 2 bis 13 sind – als abhängige Ansprüche – auf spezielle Ausgestaltungen des Gegenstandes von Anspruch 1 gerichtet.

- Anspruch 2 ist auf Verfahren gemäß Anspruch 1 gerichtet, die Zusammensetzungen betreffen, die als Komponente b1) Glufosinat und als Komponente b2) Prosulfuron, Primisulfuron, Dicamba, Pyridat, Dimethenamid, Metolachlor oder dessen S-Enantiomer, Fluometuron, Propaquizafop, Atrazin, Ametryn, Terbutylazin, Simazin, Prometryn, Fluthiacet-methyl, Butafenacil oder Oxasulfuron enthalten.

Der Gegenstand dieses Anspruchs wird durch die Priorität vom 05.09.1996 gestützt.

- Anspruch 3 ist auf ein Verfahren gemäß Anspruch 1 zur Bekämpfung von Unkraut in Phospho-Herbizid resistenten Mais gerichtet, wobei die Zusammensetzung zum einen Glufosinat oder Glyphosat enthält und zum anderen Prosulfuron, Primisulfuron, Dicamba, Pyridat, Dimethenamid oder dessen S-Enantiomer, Metolachlor oder dessen S-Enantiomer, Atrazin, NOA-402989, Ametryn, Terbutylazin, Simazin, Prometryn, Fluthiacet-methyl oder Butafenacil.

Entsprechende Verfahren, die Zusammensetzungen betreffen, welche als Komponente b1) Glyphosat enthalten, sind nicht durch die Priorität vom 05.09.1996 gestützt. Dies gilt ebenfalls für Verfahren, die Zusammensetzungen betreffen, welche als Komponente b1) Glufosinat und Komponente b2) S-Dimethenamid bzw. NOA-402989 enthalten.

- Anspruch 4 ist auf Verfahren gemäß Anspruch 3 gerichtet, die Zusammensetzungen betreffen, die als Komponente b1) Glufosinat und als Komponente b2) Prosulfuron, Primisulfuron, Dicamba, Pyridat, Dimethenamid, Metolachlor oder dessen S-Enantiomer, Atrazin, Ametryn, Terbutylazin, Simazin, Prometryn, Fluthiacet-methyl oder Butafenacil enthalten.

Der Gegenstand dieses Anspruchs wird durch die Priorität vom 05.09.1996 gestützt.

- Anspruch 5 ist auf ein Verfahren gemäß Anspruch 1 zur Bekämpfung von Unkraut in Phospho-Herbizid resistenter Soja gerichtet, wobei die Zusammensetzung zum einen Glufosinat oder Glyphosat enthält und zum anderen Metolachlor oder dessen S-Enantiomer, Fluthiacet-methyl oder Oxasulfuron.

Entsprechende Verfahren, die Zusammensetzungen betreffen, welche als Komponente b1) Glyphosat enthalten, sind nicht durch die Priorität vom 05.09.1996 gestützt.

- Anspruch 6 ist auf Verfahren gemäß Anspruch 5 gerichtet, die Zusammensetzung betreffen, die zum einen Glufosinat und zum anderen Metolachlor oder dessen S-Enantiomer, Fluthiacet-methyl oder Oxasulfuron enthalten.

Der Gegenstand dieses Anspruchs wird durch die Priorität vom 05.09.1996 gestützt.

- Anspruch 7 ist auf ein Verfahren gemäß Anspruch 1 zur Bekämpfung von Unkraut in Phospho-Herbizid resistenter Baumwolle gerichtet, wobei die Zusammensetzung zum einen Glufosinat oder Glyphosat enthält und zum anderen Fluometuron.

Entsprechende Verfahren, die Zusammensetzungen betreffen, welche als Komponente b1) Glyphosat enthalten, sind nicht durch die Priorität vom 05.09.1996 gestützt.

- Anspruch 8 ist auf Verfahren gemäß Anspruch 7 gerichtet, die Zusammensetzung betreffen, die Glufosinat und Fluometuron enthalten.

Der Gegenstand dieses Anspruchs wird durch die Priorität vom 05.09.1996 gestützt.

- Anspruch 9 ist auf ein Verfahren gemäß Anspruch 1 zur Bekämpfung von Unkraut in Phospho-Herbizid resistenten Raps oder Rüben gerichtet, wobei die Zusammensetzung zum einen Glufosinat oder Glyphosat enthält und zum anderen Propaquizafop.

Entsprechende Verfahren, die Zusammensetzungen betreffen, welche als Komponente b1) Glyphosat enthalten, sind nicht durch die Priorität vom 05.09.1996 gestützt.

- Anspruch 10 ist auf Verfahren gemäß Anspruch 9 gerichtet, die Zusammensetzung betreffen, die zum einen Glufosinat und zum anderen Propaquizafop enthalten.

Der Gegenstand dieses Anspruchs wird durch die Priorität vom 05.09.1996 gestützt.

- Anspruch 11 ist auf ein Verfahren gemäß Anspruch 1 zur Bekämpfung von Unkraut in Phospho-Herbizid resistenten Zuckerrohr gerichtet, wobei die Zusammensetzung zum einen Glufosinat oder Glyphosat enthält und zum anderen Ametryn.

Entsprechende Verfahren, die Zusammensetzungen betreffen, welche als Komponente b1) Glyphosat enthalten, sind nicht durch die Priorität vom 05.09.1996 gestützt.

- Anspruch 12 ist auf Verfahren gemäß Anspruch 1 gerichtet, die Zusammensetzung betreffen, die Glufosinat und Ametryn enthalten.

Der Gegenstand dieses Anspruchs wird durch die Priorität vom 05.09.1996 gestützt.

- Anspruch 13 ist auf ein Verfahren gemäß Anspruch 1 gerichtet, wobei die Aufwandmenge der Zusammensetzung bei 0.3 bis 4.0 kg ai/ha liegt.

In Hinblick auf die Stützung durch die Priorität vom 05.09.1996 gilt das unter Anspruch 1 bemerkte.

Der unabhängige Anspruch 14 ist auf eine herbizide Zusammensetzung gerichtet, die zusätzlich zu den üblichen inerten Formulierungshilfsstoffen, zum einen Glufosinat und zum anderen eine synergistisch wirksame Menge mindestens eines Herbizids ausgewählt aus der Gruppe umfassend Prosulfuron, Primisulfuron, Pyridat, Dimethenamid sowie dessen S-Enantiomer, das S-Enantiomer von Metolachlor, Fluometuron, Propaquizafop, Clodinafop, Norflurazon, Ametryn, Terbutylazin, Simazin, Prometryn, NOA-402989, Fluthiacet-methyl, Butafenacil und Oxasulfuron, enthält.

Anspruch 14 wird nicht durch die Priorität vom 05.09.1996 gestützt.

Der unabhängige Anspruch 15 ist auf eine herbizide Zusammensetzung gerichtet, die zusätzlich zu den üblichen inerten Formulierungshilfsstoffen, zum einen Glyphosat und zum anderen eine synergistisch wirksame Menge mindestens eines Herbizids ausgewählt aus der Gruppe umfassend Prosulfuron, Primisulfuron, Dicamba, Pyridat, das S-Enantiomer von Dimethenamid, das S-Enantiomer von Metolachlor, Fluometuron, Propaquizafop, Clodinafop, Norflurazon, Ametryn, Prometryn, NOA-402989, Fluthiacet-methyl, Butafenacil und Oxasulfuron, enthält.

Anspruch 15 wird ebenfalls nicht durch die Priorität vom 05.09.1996 gestützt.

Einspruchsbegründung

1. NEUHEIT

1.1. Anspruch 1

Der Gegenstand des Anspruchs 1 des strittigen europäischen Patents EP 930 823 ist aufgrund der in D1 – D 8 vermittelten Lehren nicht neu nach Art. 54 EPÜ. Beispielsweise lehrt

- D1 (S. 5, Absatz 1 i.V.m. S. 3-4, letzter Absatz) Verfahren zur Bekämpfung von Unkraut in Herbizid-resistenten Kulturen, wobei Mischungen von Glufosinat bzw. Glyphosat mit Prosulfuron, Primisulfuron bzw. Oxasulfuron verwendet werden (Art. 54(2));
- D2 (Absatz 3, Z. 2 i.V.m. Absatz 17) Mischungen von Glufosinat bzw. Glyphosat mit Metolachlor, die zur Bekämpfung von Unkraut in Herbizid-resistenten Kulturpflanzen geeignet sind (Art. 54(2));
- D3 (S. 11 Absatz 5, Z. 2+3 i.V.m. Absatz 1+2) Mischungen, die Glufosinat bzw. Glyphosat sowie S-Metolachlor enthalten, welche zur Bekämpfung von unerwünschten Pflanzen in Herbizid-resistenten Kulturen eingesetzt werden (Art. 54(3) bzw. Art. 54(2));
- D4 (S. 4, Absatz 4 i.V.m. S. 3/4 Absatz 6) Mischungen, die Glufosinat bzw. Glyphosat sowie Fluthiacet-methyl enthalten; diese können zur Bekämpfung von unerwünschten Pflanzen in Herbizid-resistenten Kulturen – insbesondere Glufosinat- bzw. Glyphosat-resistenten Kulturen eingesetzt werden (Art. 54(3) bzw. Art. 54(2));
- D5 (S. 16/17, letzter Absatz, vorletzte Zeile i.V.m. S. 10, Absatz 4) Mischungen von Glufosinat bzw. Glyphosat mit Butafenacil, die zur Bekämpfung von unerwünschten Pflanzen in Herbizid-resistenten Kulturen eingesetzt werden können (Art. 54(3) bzw. 54(2));
- D6 (Spalte 7, Z. 17-32) Mischungen von Glyphosat mit Dicamba, Chloracetaniliden, wie beispielsweise Metolachlor, bzw. Atrazin, die in Glyphosat resistenten Kulturpflanzen verwendet werden können. Wie dem Fachmann bekannt ist umfasst die Wirkstoffklasse der Chloracetanilide neben Metolachlor auch sein S-Enantiomer ebenso wie Dimethenamid sowie dessen S-Enantiomer und werden von dem Fachmann mitgelesen. Somit sind auch diejenigen Verfahren, die diese entsprechenden Mischungen betreffen nicht mehr neu (Art. 54(2));
- D7 (S. 14, Absatz 2) Mischungen von Glyphosat und Fluthiacet-methyl (= CGA 248 757) , die in Glyphosat-resistenter Soya verwendet werden (Art. 54(2));
- D8 (S. 267) die Verwendung von Mischungen von Glyphosat und Dimethenamid (= SAN 582H) bzw. Oxasulfuron (= CGA 277476) in Glyphosat-resistenter Soya (Art. 54(2)).

1.2. Anspruch 2

Diese spezielle Ausführungsform von Anspruch 1 ist auf Verfahren, betreffend Zusammensetzungen, die Glufosinat enthalten, gerichtet. Dieser Erfindungsgegenstand ist nicht neu nach Art. 54 in Hinblick auf die Dokumente D1 bis D5 wie entsprechend den Erläuterungen unter Punkt 1.1. bzgl. der Verfahren betreffend Glufonsinate enthaltenden Zusammensetzungen ausgeführt wurde.

1.3. Anspruch 3

Diese spezielle Ausgestaltungsform von Anspruch 1 ist ebenfalls nicht neu nach Art. 54 bzgl. der Dokumente D1, D2 - D6. U.a. offenbart

- D1 Verfahren zur Bekämpfung von Unkraut in Herbizid-resistenten Kulturen, wobei Mischungen von Glufosinat bzw. Glyphosat mit Prosulfuron bzw. Primisulfuron verwendet werden. Bevorzugt werden Kulturen wie z.B. Mais behandelt (S. 5, Absatz 1 i.V.m. S. 3-4, letzter Absatz und S. 4 erster Absatz) S. 3-4, letzter Absatz) (Art. 54(2));
- D3 Mischungen, die Glufosinat bzw. Glyphosat sowie S-Metolachlor enthalten, welche zur Bekämpfung von unerwünschten Pflanzen in Herbizid-resistenten Kulturen, vorzugsweise in Mais, eingesetzt werden (S. 11 Absatz 5, Z. 2+3 i.V.m. Absatz 1+2 und S. 12, letzter Absatz) (Art. 54(3) bzw. Art. 54(2));
- D4 Mischungen, die Glufosinat bzw. Glyphosat sowie Fluthiacet-methyl enthalten; diese können zur Bekämpfung von unerwünschten Pflanzen in Herbizid-resistenten Kulturen – insbesondere in Mais, der Glufosinat- bzw. Glyphosat-resistent ist, eingesetzt werden (S. 4, Absatz 4 i.V.m. S. 3/4 Absatz 6, S. 4, Absatz 1) (Art. 54(3) bzw. Art. 54(2));
- D5 Mischungen von Glufosinat bzw. Glyphosat mit Butafenacil, die zur Bekämpfung von unerwünschten Pflanzen in Herbizid-resistenten Kulturen, insbesondere in Mais, eingesetzt werden können (S. 16/17, letzter Absatz, vorletzte Zeile i.V.m. S. 10, Absatz 4 und S. 21, Absatz 1) (Art. 54(3) bzw. 54(2));
- D6 Mischungen von Glyphosat mit Dicamba, Chloracetaniliden, wie beispielsweise Metolachlor, bzw. Atrazin, die in Glyphosat resistenten Kulturpflanzen, wie Mais, verwendet werden können. Wie dem Fachmann bekannt ist umfasst die Wirkstoffklasse der Chloracetanilide neben Metolachlor auch sein S-Enantiomer ebenso wie Dimethenamid sowie dessen S-Enantiomer. Somit sind auch diejenigen Verfahren, die die Anwendung der entsprechenden Mischungen in Mais betreffen nicht mehr neu (Spalte 7, Z. 17 - 32) (Art. 54(2)).

1.4. Anspruch 4

Diese spezielle Ausführungsform von Anspruch 3 ist auf Verfahren, betreffend Zusammensetzungen, die Glufosinat enthalten, gerichtet. Dieser Erfindungsgegenstand ist nicht neu nach Art. 54 in Hinblick auf die Dokumente D1, D3 – D5 wie entsprechend den Erläuterungen unter Punkt 1.3. bzgl. der Verfahren betreffend Glufosinat enthaltenden Zusammensetzungen ausgeführt wurde

1.5. Anspruch 5

Diese spezielle Ausgestaltungsform von Anspruch 1 ist ebenfalls nicht neu nach Art 54 bzgl. der Dokumente D1, D3 – D4 und D7 – D8. Beispielsweise beschreibt

- D1 Verfahren zur Bekämpfung von Unkraut in Herbizid-resistenten Kulturen, wobei Mischungen von Glufosinat bzw. Glyphosat mit Oxasulfuron verwendet werden. Bevorzugt werden Kulturen wie z.B. Soja behandelt (S. 5, Absatz 1 i.V.m. S. 3-4, letzter Absatz und S. 4 erster Absatz) (Art. 54(2));
- D3 Mischungen, die Glufosinat bzw. Glyphosat sowie S-Metolachlor enthalten, welche zur Bekämpfung von unerwünschten Pflanzen in Herbizid-resistenten Kulturen, vorzugsweise in Soja, eingesetzt werden (S. 11 Absatz 5, Z. 2+3 i.V.m. Absatz 1+2 und S. 14, Absatz 1) (Art. 54(3) bzw. Art. 54(2));
- D4 Mischungen, die Glufosinat bzw. Glyphosat sowie Fluthiacet-methyl enthalten; diese können zur Bekämpfung von unerwünschten Pflanzen in Herbizid-resistenten Kulturen – insbesondere in Soja, die Glufosinat- bzw. Glyphosat-resistent ist, eingesetzt werden (S. 4, Absatz 4 i.V.m. S. 3/4 letzter Absatz + S.4, Absatz 1) (Art. 54(3) bzw. Art. 54(2));
- D7 Mischungen von Glyphosat und Fluthiacet-methyl (=CGA 248 757), die in Glyphosat-resistenter Soja verwendet werden (S. 14, Absatz 2) (Art. 54(2));
- D8 die Verwendung von Mischungen von Glyphosat und Oxasulfuron in Glyphosat-resistenter Soja (S. 267) (Art. 54(2)).

1.6. Anspruch 6

Diese spezielle Ausführungsform von Anspruch 5 ist auf Verfahren, betreffend Zusammensetzungen, die Glufosinat enthalten, gerichtet. Dieser Erfindungsgegenstand ist nicht neu nach Art. 54 in Hinblick auf die Dokumente D1, D3 und D4 wie entsprechend den Erläuterungen unter Punkt 1.5. bzgl. der Verfahren betreffend Glufonsinat enthaltenden Zusammensetzungen ausgeführt wurde.

1.7. Anspruch 13

Auch diese spezielle Ausgestaltungsform von Anspruch 1 ist nicht neu nach Art. 54, da die Dokumente D1, D3 – D8 außerdem Aufwandmengen für die Zusammensetzungen lehren, welche diejenige des vorliegenden Anspruches - 0.3 – 4.0 kg ai/ha - neuheitsschädlich treffen:

D1	0.25 – 2.5 kg ai/ha (S. 5, Absatz 3)
D3	0.3 – 4.0 kg ai/ha (S. 15, Absatz 2)
D4	0.25 – 2.5 kg ai/ha (S. 4, Absatz 5)
D5	0.05 – 4.0 kg ai/ha (S. 22, Absatz 1)
D6	0.2 – 8 lb/acre = 0.22 – 8.96 kg ai/ha (Spalte 7, Z. 35 – 39)
D7	0.422 kg ai/ha (S. 14, Absatz 1 bzw. S. 18, Tabelle 4)
D8	0.63 lb/acre = 0.71 kg ai/ha (S. 267)

1.8. Anspruch 14

Der Gegenstand des Anspruchs 14 des strittigen europäischen Patents EP 930 823 ist aufgrund der in D1, D3 – D5 und D9 – D15 vermittelten Lehren nicht neu nach Art. 54 EPÜ. Beispielsweise lehrt

- D1 Zusammensetzungen von Glufosinat mit Prosulfuron, Primisulfuron bzw. Oxasulfuron (S. 5, Absatz 1) (Art. 54(2));
- D3 Zusammensetzungen, die Glufosinat sowie S-Metolachlor enthalten (S. 11, Absatz 5, Z. 2) (Art. 54(2));
- D4 Zusammensetzungen, die Glufosinat und Fluthiacet-methyl enthalten (S. 4, Absatz 4) (Art. 54(2));
- D5 Zusammensetzungen von Glufosinat mit Butafenacil (S. 16/17, letzter Absatz, vorletzte Zeile (54(2));
- D9 Zusammensetzungen von Glufosinat (= A-1) mit Primisulfuron (= B4)(S. 5, Absatz 2) (Art. 54(2));
- D10 Zusammensetzungen von Glufosinat mit Dimethenamid bzw. S-Dimethenamid (S. 7, Z. 5-6, S. 2, Z. 10) (Art. 54(2));
- D11 Zusammensetzungen von Glufosinat mit Fluometuron bzw. Norflurazon (Absatz 4) (Art. 54(2));
- D12 Zusammensetzungen von Glufosinat mit Ametryn bzw. Simazin (S. 58, Tabelle 2) (Art. 54(2)).

- D13 Zusammensetzungen von Glufosinat mit Ametryn, Terbutylazin, Simazin bzw. Prometryn (S.7 - 8, DII – DV) (Art. 54(2));
- D14 Zusammensetzungen von Glufosinat und Terbutylazin bzw. Simazin (S. 3, Z. 20 sowie Tabellen 1 bis 3) (Art. 54(2));
- D15 Zusammensetzungen von Glufosinat mit Simazin (S. 1050, Absatz 3) (Art. 54(2)).

1.9. Anspruch 15

Der Gegenstand des Anspruchs 15 des vorliegenden Streitpatents ist aufgrund der in D1, D3 – D10, D12, D16 – D21 vermittelten Lehren nicht neu nach Art. 54 EPÜ. U.a. offenbart

- D1 Zusammensetzungen von Glyphosat mit Prosulfuron, Primisulfuron bzw. Oxasulfuron (S. 5, Absatz 1) (Art. 54(2));
- D3 Zusammensetzungen, die Glyphosat sowie S-Metolachlor enthalten (S. 11, Absatz 5, Z. 3) (Art. 54(2));
- D4 Zusammensetzungen, die Glyphosat und Fluthiacet-methyl enthalten (S. 4, Absatz 4) (Art. 54(2));
- D5 Zusammensetzungen von Glyphosat mit Butafenacil (S. 16/17, letzter Absatz, vorletzte Zeile) (Art. 54(2));
- D6 Zusammensetzungen von Glyphosat mit Dicamba, (Spalte 7, Z. 17 – 33) (Art. 54(2));
- D7 Zusammensetzungen von Glyphosat mit Fluthiacet-methyl (S. 14, Absatz 2, S. 18 Tabelle 4) (Art. 54(2));
- D8 Zusammensetzungen von Glyphosat mit Oxasulfuron (Art. 54(2));
- D9 Zusammensetzungen von Glyphosat (= A-2) mit Primisulfuron (= B4) (S. 5, Absatz 3) (Art. 54(2));
- D10 Zusammensetzungen von Glyphosat mit S-Dimethenamid (S. 7, Z. 5-6, S. 2, Z. 10) (Art. 54(2));
- D12 Zusammensetzungen von Glyphosat mit Ametryn (S. 58, Tabelle 2) (Art. 54(2));

- D16 und D17 Zusammensetzungen von Glyphosat mit Dicamba (Tabelle 1 bzw. S. 16, Beispiel 30 und S. 17, Beispiel 33) (Art. 54(2));
- D18 Zusammensetzungen von Glyphosat mit Fluometuron (Tabelle 1) (Art. 54(2));
- D19 und D20 Zusammensetzungen von Glyphosat mit Norflurazon (S. 12 – Tabelle sowie Anspruch 12, bzw. S. 970, Spalte 2, vorletzter Absatz) (Art. 54(2));
- D21 Zusammensetzungen von Glyphosat mit Ametryn bzw. Prometryn (S. 5, Z. 57 bzw. 60) (Art. 54(2)).

Die voranstehenden Ausführungen belegen, dass die Ansprüche 1 bis 6 sowie 13 bis 15 nicht neu sind.

2. ERFINDERISCHE TÄTIGKEIT

Der Erfindungsgegenstand des vorliegenden strittigen Patents basiert nicht auf erfinderischer Tätigkeit.

Auf S. 3, Absatz 0005 des Streitpatents wird bemerkt, dass es überraschend ist, dass die Kombination eines Phospho-Herbizids – also Glufosinat bzw. Glyphosat – mit mindestens einem weiteren Herbizid (Komponente b2) zu einer synergistischen herbiziden Wirkung führt. Die mit der Bescheidserwiderung vom 08. Juni 2001 vorgelegten Daten sind jedoch nicht auf einen synergistischen Effekt bzgl. der Unkrautbekämpfung der besagten Mischungen in sensitiven bzw. Phosphoherbiziden Kulturen gerichtet sondern auf eine Art Safening-Effekt der Komponente b2) auf Glufosinat bzw. Glyphosat in den betreffenden Kulturen. Hierbei handelt es sich allerdings um einen völlig anders gearteten Effekt, der nicht zum Nachweis der erfinderischen Tätigkeit des vorliegenden Streitpatents geeignet ist, da das Streitpatent in Hinblick auf diesen Effekt keinerlei Offenbarung liefert. Somit wurde kein erfindungsgemäßer unerwarteter Effekt gezeigt.

Ebenso sei in Frage gestellt, ob für die Ansprüche 1, 3, 5, 7, 9 und 11 ein erfindungsgemäßer Effekt in Glufosinat-toleranten Kulturen mit Glyphosat-haltigen Zusammensetzungen, bzw. in Glyphosat-toleranten Kulturen mit Glufosinat-haltigen Zusammensetzungen erreicht werden kann.

2.1. Anspruch 1

Wie bereits in dem Streitpatent selbst dargestellt (S. 5, Absatz 0022) ist aus Res. Rep. North Cent. Weed Sci. 51, 169-170 (1994) bekannt, daß Mischungen von Glufosinat mit Atrazin bzw. Cyanazin in Glufosinat toleranten Mais eingesetzt werden können.

Weiterhin lehren die ebenfalls aufgeführten Dokumente Res. Rep. Expert Comm. Weeds East Can. 1, 242-243 (1995) und Res. Rep. Expert Comm. Weeds East Can. 1, 205-206 (1995) Mischungen von Glufosinat mit Metolachlor, Glufosinat mit Metolachlor und Atrazin, bzw. Glufosinat mit Atrazin und Dicamba, die ebenfalls in Glufosinat resistenten Mais verwendet werden können.

Dieser Stand der Technik legt es dem Fachmann nahe diese entsprechenden Mischungen auch in anderen Glufosinat resistenten Kulturen, wie Soja etc. zu verwenden, da dem Fachmann jeweils Herbizide der Komponente b2) wohl bekannt sind, die selektiv in der betreffenden Kultur sind. So ist Metolachlor nicht nur Mais- sondern auch Soja-verträglich.

Ebenso offenbart das Streitpatent (S. 5, Absatz 0022), dass in Abstr. Meet. Weed Sci Soc. Am. 37, 87 1997, Res. Rep. North Cent. Weed Sci. Soc. 52, 426-427 (1995) und Res. Rep. North Cent. Weed Sci. Soc. 52, 266-267 (1995) Mischungen von Glyphosat und Atrazin, die in Glyphosat-resistenten Mais verwendet werden, sowie Zusammensetzungen von Glyphosat und Metolachlor bzw. Dimethenamid in Glyphosat-toleranter Soja, beschrieben werden. Auch hier gilt wiederum, dass es für den Fachmann naheliegend ist, diese Mischungen in anderen resistenten Kulturen, die verträglich bzgl. der Komponente b2) sind, einzusetzen.

Somit basiert Anspruch 1 nicht auf erfinderischer Tätigkeit.

Diese im Streitpatent selbst genannten bekannten Verfahren (siehe voranstehender Abschnitt) legen es dem Fachmann auch nahe andere bereits bekannte Zusammensetzungen, die Glufosinat bzw. Glyphosat und ein weiteres Herbizid, wie in Anspruch 1 beschrieben, enthalten in dem strittigen Verfahren zu verwenden (siehe hierzu auch die Punkt 1.8. und 1. 9.).

Folglich basiert Anspruch 1 nicht auf erfinderischer Tätigkeit.

Weiterhin sind aus D1 Verfahren bekannt, die zur Bekämpfung von Unkraut in Glufosinat- bzw. Glyphosat resistenten Kulturen verwendet werden können. Diese zum einen neuheitsschädlichen Verfahren (siehe Punkt 1.1) stellen auch die erfinderische Tätigkeit der nicht neuheitsschädlich getroffenen Verfahren des Streitpatents in Frage, denn es ist für den Fachmann naheliegend diese Prinzipien entsprechend mit anderen Mischungen bzw. Phospho-Herbizid resistenten Kulturen durchzuführen. Dies gilt in auch in Bezug auf D2.

Analoges gilt auch für D3 – D8 in Hinblick auf Verfahren in Hinblick auf Zusammensetzungen, die als Komponente b1) Glyphosat enthalten.

Weiterhin sei bemerkt, dass die vorliegenden Versuchsdaten (Bescheidserwiderung vom 08. Juni 2001) - auch wenn sie geeignet wären, die erfindungsgemäße, offenbarte Aufgabe zu lösen – dies

dennoch nicht zu leisten vermögen, denn die Beispiele von dem Technischen Memorandum 1 "Glyphosat und Atrazin" sowie "Glyphosat und Metolachlor" in Glyphosat-resistenten Mais sind aus D6 bekannt und stellen somit Stand der Technik dar. Die anderen nicht neuheitlich getroffenen Beispiele, wie "Glyphosat und Pyridate" zeigen einen den bekannten Mischungen entsprechenden Effekt in der Pflanzenhöhe, aber keinen überraschenden.

Analoges ergibt sich für aus D8 bekannt Verfahren. Aus D8 sind Mischungen von "Glyphosat mit Dimethenamid bzw. Oxasulfuron" in Glyphosat-resistenter Soja bekannt. Die im Technischen Memorandum 2 aufgeführten nicht neuheitsschädlich getroffenen Beispiele, wie z.B. "Glyphosat und Propaquizafop" oder "Glyphosat und Clodinafop" zeigen in Glyphosat-resistenter Soja den "gleichen" Effekt wie die bekannten Zusammensetzungen.

Dies gilt auch für aus D1 bekannt Verfahren. Aus D1 sind z.B. Mischungen von "Glufosinat mit Primisulfuron, Prosulfuron bzw. Oxasulfuron" in Glufosinat-resistenten Mais bzw. Soja bekannt. Die den Technischen Memoranden 3 bzw. 4 aufgeführten nicht neuheitsschädlich getroffenen Beispiele, wie z.B. "Glufosinat und Propaquizafop" zeigen in Glyphosat-resistenter Soja den "gleichen" Effekt wie die bekannten Zusammensetzungen.

Aus all diesen Ausführungen sowohl allein als auch im Kombination folgt, dass Anspruch 1 nicht auf erfinderischer Tätigkeit beruht.

2.2. Anspruch 2

Auch Anspruch 2 beruht nicht auf erfinderischer Tätigkeit. Hier sei auf die entsprechenden Ausführungen bzgl. Verfahren, die Glufosinat als Komponente b1) enthalten, unter Punkt 2.1 verwiesen.

2.3. Ansprüche 3, 5, 7, 9 und 11

Diese Ansprüche beruhen auch nicht auf erfinderischer Tätigkeit. Hier sei auf die entsprechenden Ausführungen bzgl. Verfahren, die Glufosinat bzw. Glyphosat als Komponente b1) enthalten, unter Punkt 2.1 verwiesen.

2.4. Ansprüche 4, 8, 10 und 12

Auch diese Ansprüche basieren nicht auf erfinderischer Tätigkeit. Auch hier sei auf die entsprechenden Ausführungen unter Punkt 2.1 verwiesen die Verfahren, die Glufosinat als Komponente b1) enthalten, betreffen.

2.6. Anspruch 13

Auch hier gelten in Analogie, die unter Punkt 2.1. gemachten Ausführungen.

2.7. Ansprüche 14 und 15


Wie unter Punkt 1.8. und 1.9. sowie im Streitpatent selbst bemerkt sind eine Vielzahl von herbiziden Mischungen von Glufosinat bzw. Glyphosat mit mindestens einen weiteren Herbizid bekannt. Es ist daher für den Fachmann naheliegend entsprechende „Lücken“ mit Zusammensetzungen von dem Fachmann bekannten Herbiziden mit Glufosinat bzw. Glyphosat zu schließen.

Ebenso zeigen die in den Technischen Memoranden 1 bis 5 nicht neuheitsschädlich vorweggenommenen Mischungen wie beispielsweise „Glyphosat und Pyridate“, „Glyphosat und Clodinafop“ oder „Glufosinat und Propaquizafop“ das „gleiche“ Verhalten wie die im Stand der Technik bekannten Mischungen.

Somit beruhen auch die auch diese Ansprüche nicht auf erfinderischer Tätigkeit.

Die voranstehenden Ausführungen belegen, daß für das strittige Patent in seiner Gesamtheit keinerlei Raum besteht, da seine Lehre vorweggenommen bzw. nahegelegt wird.

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Anlage 1 - Kopie für das Kassen- und Rechnungswesen

Anlage 2 - Kopien des Standes der Technik

(der Faxübermittlung sind nur die Deckblätter bzw. relevanten Seiten beigelegt)